DOCUMENT RESUME

ED 459 196 TM 033 493

| | |
|---|---|
| AUTHOR | Berg, Kathleen, Ed.; Lai, Morris, Ed. |
| TITLE | Pacific Educational Research Journal, 2000. |
| INSTITUTION | Hawaii Univ., Manoa. Curriculum Research and Development Group. |
| SPONS AGENCY | Hawaii Educational Research Association. |
| PUB DATE | 2000-00-00 |
| NOTE | 114p.; Published biennially. For volume 9, see ED 435 633. |
| AVAILABLE FROM | "Pacific Educational Research Journal," Hawaii Educational Research Association (HERA) c/o Department of Educational Psychology, University of Hawaii at Manoa, 1776 University Ave., Wist 214, Honolulu, HI 96822-2463 (subscription: Individuals, $12; Institutions, $20). Tel: 808-956-4952; Tel: 808-956-7900. |
| PUB TYPE | Collected Works - Serials (022) |
| JOURNAL CIT | Pacific Educational Research Journal; v10 n1 2000 |
| EDRS PRICE | MF01/PC05 Plus Postage. |
| DESCRIPTORS | Adolescents; *Cultural Awareness; *Diversity (Student); *Educational Research; Elementary Secondary Education; *Health Education; High Risk Students; Higher Education; *Minority Groups; Preservice Teachers; Student Attitudes; Teacher Attitudes |
| IDENTIFIERS | *Pacific Rim |

ABSTRACT

This journal features theoretical, empirical, and applied research with implications for and relevance to education in the Pacific area. This volume contains: (1) "Community Perceptions of Culture and Education on Moloka'i" (Lois A. Yamauchi, William L. Greene, Katherine T. Ratliffe, and Andrea K. Ceppi); (2) "Academic Performance of Asian American Adolescents: An Exploration of the Relative Effects of Cultural and Social Capital" (Yoshimitsu Takei, Melvin E. Clark, Roger Shouse, and Shan-nan Chang); (3) "How Well Are Schools Addressing the Health-Related Education Needs of Hawai'i Youth? Results from the Youth Risk Behavior Survey and the School Health Education Profile Survey" (Beth Pateman, Susan M. Saka, and Morris K. Lai); (4) "A Longitudinal Study of the Patterns of Language Use in American Samoa: 1973-1998" (Anne R. Freese and Peggy A. Haleck); (5) "Teachers' Attitudes toward Problem Behaviors in Japan and the U.S." (Hideki Sano, Osami Fukushima, Evangelina Bustamante Jones, Russell L. Young, John D. Chamley, and Marian Aste); and (6) "Preservice Teachers' Perceptions of Risks" (E. Barbara Klemm, Marie K. Iding, Thomas W. Speitel, and John S. Ige). Each article contains references. (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 459 196

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

# Pacific Educational Research Journal

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
K. F. Berg
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
1

BEST COPY AVAILABLE

**2000**
**VOLUME 10**
**NUMBER 1**

Sponsored by
Hawai'i Educational Research Association

TM033493

# PACIFIC EDUCATIONAL RESEARCH JOURNAL

2000
Volume 10
Number 1

**Editors**
KATHLEEN F. BERG and MORRIS K. LAI
University of Hawai'i at Mānoa

**Associate Editor**
SANDRA K. SHIMABUKURO
University of Hawai'i at Mānoa

**Editorial Advisory Board**
KATHRYN H. AU, University of Hawai'i at Mānoa
JAMES CAMPBELL, St. John's University
MARK D. GALL, University of Oregon
CELIA S. GENISHI, Columbia University
KENJI HAKUTA, Stanford University
DONALD T. MIZOKAWA, University of Washington
JOHN U. OGBU, University of California at Berkeley
VALERIE O. PANG, San Diego State University
SAMUEL S. PENG, National Center for Educational Statistics
MICHAEL SCRIVEN, Claremont Graduate University

**Sponsored by**
Hawai'i Educational Research Association

Copyright © 2000 by the Hawai'i Educational Research Association. Permission to reprint tables, figures, or more than 500 words of text must be obtained from the Association by writing to HERA, c/o Department of Educational Psychology, University of Hawai'i at Mānoa, 1776 University Avenue, Honolulu, HI 96822-2463.

Artist Byron Inouye created the journal logo. He combined Asian and Pacific themes using a design element to create a lotus blossom. The waving pages beneath the blossom symbolize academic scholarship and also call forth the Pacific Ocean. The opening lotus is symbolic of new knowledge and insights resulting from research.

The *Pacific Educational Research Journal* is printed by the Educational Publications Center of the Curriculum Research & Development Group, University of Hawai'i at Mānoa.

# PACIFIC EDUCATIONAL RESEARCH JOURNAL

The *Pacific Educational Research Journal* is published annually and features theoretical, empirical, and applied research with implications for and relevance to education in the Pacific area.

**Contributing Editors**

Lisa M. Beardsley, Loma Linda University
Stephen R. Berg, Hawai'i Pacific University
Paul R. Brandon, University of Hawai'i at Mānoa
Kenyon S. Chan, Loyola Marymount University
Russell K. Endo, University of Colorado
Thomas G. Gans, Hawai'i Department of Education
A. Lin Goodwin, Columbia University
Earl S. Hishinuma, University of Hawai'i at Mānoa
Eunsook Hong, University of Nevada at Las Vegas
Joanne K. Itano, University of Hawai'i at Mānoa
Alice J. Kawakami, University of Hawai'i at Hilo
Margaret J. Maaka, University of Hawai'i at Mānoa
Michael A. Power, Everett Public School System, Washington
Susan M. Saka, University of Hawai'i at Mānoa
Alan R. Shoho, University of Texas at San Antonio
Christine Sleeter, California State University at Monterey Bay
Gisela Speidel, Chaminade University
Katherine A. Tibbetts, Kamehameha Schools
Sau-Lim Tsang, ARC Associates
Roy Winstead, Brigham Young University, Hawai'i
Lois A. Yamauchi, University of Hawai'i at Mānoa
Shuqiang Zhang, University of Hawai'i at Mānoa

# CONTENTS


**Editors' Notes** 1

**Community Perceptions of Culture and Education on Moloka'i** 3
*Lois A. Yamauchi, William L. Greene, Katherine T. Ratliffe, and Andrea K. Ceppi*

**Academic Performance of Asian American Adolescents: An Exploration of the Relative Effects of Cultural and Social Capital** 23
*Yoshimitsu Takei, Melvin E. Clark, Roger Shouse, and Shan-nan Chang*

**How Well Are Schools Addressing the Health-Related Education Needs of Hawai'i Youth? Results From the Youth Risk Behavior Survey and the School Health Education Profile Survey** 43
*Beth Pateman, Susan M. Saka, and Morris K. Lai*

**A Longitudinal Study of the Patterns of Language Use in American Samoa: 1973–1998** 57
*Anne R. Freese and Peggy A. Haleck*

**Teachers' Attitudes Toward Problem Behaviors in Japan and the U.S.** 73
*Hideki Sano, Osami Fukushima, Evangelina Bustamante Jones, Russell L. Young, John D. Chamley, and Marian Aste*

**Preservice Teachers' Perceptions of Risks** 87
*E. Barbara Klemm, Marie K. Iding, Thomas W. Speitel, and John S. Ige*

**Information for Contributors** 107

# Editors' Notes

We are pleased to greet the newest century with Volume 10 of the *Pacific Educational Research Journal* (*PERJ*). Although we may be talking loosely when we describe *PERJ* as being published "across the centuries," we are accurate when we describe its coverage as across diverse locations, peoples, topics, and approaches that characterize educational research in the Pacific area. For certain in this issue we have published research across diverse ethnic groups, diverse methods of research, and diverse authors.

This issue's authors reside in nations all across the Pacific Ocean: Japan, Taiwan, American Samoa, Hawai'i, and the U.S. mainland. Collectively their research has focused on Hawaiians, Chinese, Filipinos, Japanese, Koreans, Samoans, Southeast Asians, and other U.S. Americans. They collected data from middle school, high school, and community college students; preservice and in-service[1] teachers; and adults from the community. Their methods have included interviews, surveys, reactions to vignettes, Likert-type scales, rankings, and secondary analyses of a national database.

Yamauchi, Greene, Ratliffe, and Ceppi start the issue with a fascinating ethnographic study of goals, expectations, and educational experiences of adults living in a small, rural, island community in Hawai'i. Their findings have major implications for education in such areas.

Takei, Clark, Shouse, and Chang question the stereotype that Asian American immigrant children are handicapped relative to native-born children largely because of their having weaker skills in English. Using data from the National Education Longitudinal Study (NELS), the authors investigated whether socioeconomic attainment of parents is a more consistent predictor of school success for all students, including Asians.

Pateman, Saka, and Lai provide an update to their 1996 *PERJ* article on the status of risky behaviors of youth in Hawai'i. By comparing the behavior of Hawai'i middle and high school students with that of a representative U.S. sample, the authors provide excellent information about the areas where Hawai'i's youth are at relatively more or less risk.

Freese and Haleck's data cover a remarkable 25-year period. They examined the interpersonal and situational language use of young American Samoan adults over the past two and a half decades.

Sano, Fukushima, Jones, Young, Chamley, and Aste investigated how teachers in the U.S. and Japan differed in their attitudes toward problem

---

[1]The seemingly inconsistent spellings of "preservice" and "in-service" are consistent with American Psychological Association (APA) style, which directs us to *Miriam-Webster's Collegiate Dictionary* (10th ed.) as the arbiter of spelling questions. This is just one example of the kinds of things that add stress to the lives of compulsive editors committed to following APA's *Publication Manual* (4th ed.).

behaviors. By using vignettes, the authors were able to solicit reactions that show clearly that the two groups of teachers had different patterns of understanding and reacting to various student problem situations, perhaps reflecting differing teacher values.

Klemm, Iding, Speitel, and Ige show that preservice teachers have very different perceptions from experts about environmental risks. The authors show how misperceptions of risk could have an especially notable effect on education about and on islands such as Hawai'i.

As we move into the 21st century, we envision *PERJ* evolving to keep pace with the changes now taking place in communications and publishing. We are exploring how we might make *PERJ* electronically available and thereby reach a wider audience. For this issue, we have used e-mail and e-mail attachments to discuss editing changes with the authors and to send versions of manuscripts back and forth.

As we embark upon our journey of modernization, we hope not to be alone but accompanied by you, our *PERJ* audience. We hope you will send your advice and suggestions electronically, of course. We provide e-mail addresses, URLs, and telephone numbers. (Thanks to the relative uniqueness of the letters that are an abbreviation of the journal, a World Wide Web search using "PERJ" and "Hawaii" usually comes up with the journal's home page.) Because we are publishing across the centuries, however, we also welcome regular mail from our readers.

For this issue, we were fortunate to again have the production expertise of Associate Editor Sandra Shimabukuro, ably assisted by Jennifer Callejo, Hien Huynh, and other student employees of the Evaluation Office of the Curriculum Research & Development Group (CRDG). Artist Byron Inouye again did the layout for the cover, and Gayle Hamasaki ensured a smooth publication process at the printers. Thanks also to Dr. Arthur King, Jr., Director of CRDG, who has supported our work on this seemingly interminable but worthwhile task.

We hope this volume of *PERJ* is both interesting and informative. Its diversity in content, methods, and authors reflects the Hawaiian saying, *'A'ohe pau ka 'ike i ka hālau ho'okāhi* (Not all knowledge is taught in the same school—one can learn from many sources).[2]

*Me ke aloha pumehana* (with warm aloha),

*Kathleen F. Berg*
*Morris K. Lai*
Editors

[2]Puku'i, M. K. (1983). *'Ōlelo no'eau*. Honolulu, HI: Bishop Museum Press.

*Pacific Educational Research Journal*
*Vol.10, No. 1, pp. 3–22*

# Community Perceptions of Culture and Education on Moloka'i

**Lois A. Yamauchi**
*University of Hawai'i at Mānoa*
**William L. Greene**
*Southern Oregon University*
**Katherine T. Ratliffe** and **Andrea K. Ceppi**
*University of Hawai'i at Mānoa*

This study examined the goals, expectations, and educational experiences of 12 Native Hawaiian and 18 other adult community members on the island of Moloka'i, a small, rural, island community in the State of Hawai'i. The study focused on participants' perceptions regarding the intersection of the school community with various ethnic communities on the island. We were particularly interested in the educational experiences of Hawaiian students and their families, given the generally lower academic performance of Hawaiians statewide. Semistructured interviews were conducted, and these data were analyzed along the participant dimensions of Hawaiian vs. nonHawaiian and educator vs. noneducator. Results indicated that all participants identified with a common Moloka'i community, one that was friendly and relaxed. Participants also discussed the values of formal school settings on the island and the fact that these values are not uniformly accepted in the community. We discuss the implications of these results for instruction and educational policy.

Over the past 20 years, there has been an expansion of interest in the influence of the sociocultural context on learning and learners' experience in school (Minick, Stone, & Forman, 1993; Tharp, Estrada, Dalton, & Yamauchi, 1999). Educational researchers have become more interested in understanding the influence of the various cultural communities learners come from and participate in. Neo-Vygotskians, in particular (e.g., Rogoff, 1990; Tharp & Gallimore, 1988; Wertsch, 1991), have focused on the cultural community as an important source of information about education and schooling. According to Vygotsky (1978), an individual's knowledge and skills originate in interactions with others and become internalized through learners' participation in social activity. Thus, knowledge about the various cultural communities learners participate in can be helpful to educators and researchers who are interested in understanding and mediating students' school experiences.

One issue of recent interest is how learners negotiate potentially conflicting messages from different sources. For example, Phelan and her colleagues (Phelan, Davidson, & Cao, 1991) found that when there was less overlap in the values and goals of the "multiple worlds" in which students participate (i.e., home, school, and peer communities), there were more adjustment difficulties and a lesser likelihood that students would make successful transitions between the three. Henze and Vanett (1993) suggested that when students were caught between the two worlds of a more traditional Native American lifestyle and a more competitive and Western school system, they negotiated a third world for themselves that was unique from the other two. From another perspective, Ogbu (1991) argues that certain aspects of a student's cultural background are so dominant that they will always pervade over competing cultural influences. The current study attempts to examine the compatibility of and negotiation between the values and goals of some of the Native Hawaiian[1] community members on the island of Moloka'i and those of other cultural communities on the island.

**The Educational Experiences of Native Hawaiians**

A survey of the educational statistics available on Native Hawaiian people's academic experiences indicates that as a whole, the Western educational system has not served them well. As a group, Hawaiians are overrepresented in special education programs and underrepresented in higher education (Office of Hawaiian Affairs, 1994; Takenaka, 1995). In 1991, Hawaiian eighth graders scored lower than all other major ethnic groups in Hawai'i on standardized tests of both reading and mathematics. Whereas Native Hawaiians scored in the 18th and 10th national percentile ranges for reading and mathematics, respectively, the entire eighth grade population scored in the 38th and 39th percentile ranges (Office of Hawaiian Affairs, 1994).

D'Amato (1988) found that Hawaiian elementary school children in rural, western O'ahu often resisted the values and rules of school in ways that asserted their identity and self-esteem. This is similar to the resistance Ogbu (1991) described African Americans using in response to an educational system that they felt did not serve their needs. Ogbu (1992) suggests that like African Americans and other Native American people, Native Hawaiians are "involuntary minorities," who differ from "voluntary minorities" in that they can not compare themselves to those from their "home country," but instead compare themselves to the dominant majority group. Ogbu also contends that involuntary minority groups do not really believe that education will change their lower status in society, and this explains why they tend not to "buy into" the values and activities of school.

Ogbu's description of involuntary minority students' resistance to education is compatible with Berry's (1976) framework for understanding psychological acculturation. The term acculturation was originally used to describe changes in cultural groups when they came in contact with other groups (Redfield, Linton, & Herskovits, 1936). The use of the term later evolved to refer both to changes in cultures and in individuals whose cultural groups are experiencing acculturation (Berry, 1985). Berry and his colleagues (Berry, 1976; Berry, Kim, Minde, & Mok, 1987) suggest that there are four modes of acculturation that are determined by two factors: a) whether or not individuals wish to maintain their cultural identity and characteristics, and b) the extent to which they maintain contact with other groups (usually the dominant culture). When individuals desire maintenance of their cultural identity and value contact with the dominant culture, then the mode of acculturation is integration. When they do not wish to maintain their cultural identity and traditions but value contact with the dominant culture, then the mode of acculturation is assimilation. When people do not wish to maintain their cultural identity or experience forced cultural loss and at the same time do not maintain contact with the dominant culture, these individuals experience marginalization. Finally, when individuals wish to maintain their cultural identity but do not desire contact with the dominant culture, the resulting mode is separation.

Berry's mode of separation appears similar to Ogbu's description of resistance in that individuals are rejecting the dominant society's institutions and values in order to reinforce those of their own. The more than 100 years of colonization of Hawaiians by Americans resulted in both assimilation and marginalization of many native people in the islands (Ah Nee-Benham & Heck, 1998). Earlier assimilation and marginalization of Hawaiians resulted at least partly from educational policies that replaced Hawaiian values in schools with American values and other policies that tracked Hawaiians into remedial programs and separate schools (Ah Nee-Benham & Heck, 1998). Since the 1970s, however, Hawai'i has been experiencing a "Hawaiian

renaissance" or renewal of interest and pride in the Hawaiian culture (Ah Nee-Benham & Heck, 1998; Linnekin, 1983). A resistance to formal education on the part of some Hawaiians may be at least partly explained by a separation mode of acculturation. These Hawaiians may be attempting to reclaim their traditional culture and identity while rejecting the dominant society that was responsible for much of the loss in the first place.

**The Study of Values**

One of the goals of this study was to characterize the presence of particular values among Native Hawaiians and other community members on Moloka'i. That is, what the values are, where they come from, and how they are understood by various groups within the community. In addition, we were interested in how values are operationalized in multiple sociocultural contexts through observable behavior. We were interested in the ways that cultural values were modeled and experienced through shared processes of socialization. Our use of the word "culture" reflects Goodenough's (1971) definition, a set of norms of behavior in the minds of individuals who share much of the content of those norms, including the organization of world experiences, their belief system, and a general taxonomic cognitive system shared with members of the same group. Berry, Poortinga, Segall, and Dasen (1992) argue that education plays a significant role in socialization and cultural transmission, and children, as products of such a system, become enculturated through it. Trueba and his colleagues (Trueba, Jacobs, & Kirton, 1990) refer to educators as "the key agents of socialization of culturally-different children" (p. 2).

But the process of enculturation involves more than the school; parents, other adults, and peers are part of a network of influences on the child, which interact to shape the developing person (Berry et al., 1992; Phelan et al., 1991). These processes, often informal in nature, sometimes conflict with more formal school experiences and expectations (Foster, 1989; Scribner & Cole, 1973; Yamauchi & Tharp, 1995). The degree of conflict students experience may correspond to the type of acculturation they experience, as described in Berry's (1976) model. In an effort to establish a baseline of cultural values against which future intergenerational and interethnic comparisons can be made, this study focused on collecting stories, beliefs, and observations about educational experiences from community members on the island of Moloka'i.

The purpose of the current study was to examine the values, expectations, and educational experiences of residents in a rural, geographically isolated community. The perspectives sought were those of Native Hawaiian community members and community members from other ethnic groups represented on the island. We were also interested in comparing the perspectives of educators and those who were not formally employed as educators in the schools. Using semistructured interviews, we sought to

establish whether Hawaiians' values and experiences in school were discernible from other community members, including those of school personnel.

## Method

### Participants

Participants included 30 community members from the island of Moloka'i recruited through contacts in the schools and larger community. Of the 30 participants, 12 were Native Hawaiian, and 18 were from other ethnic groups, including Japanese American (n = 8), Filipino American (n = 3), European American (n = 4), Chinese American (n = 2), and one participant who considered himself "Euro-Asian." Participants' ages ranged from 20 to 81 years, with a median age of 56.5 years.

Within the Hawaiian group, only two of the participants were educators (two others also worked at school sites, one as a custodian and the other as a school secretary). The two Hawaiian educators were also the only ones in that ethnic group with a college education. Within the nonHawaiian group, 12 of the 18 participants were educators. The majority of the nonHawaiians were college educated (n = 13). All of the Hawaiian participants grew up in Hawai'i, and 10 of them were raised on Moloka'i. Of the nonHawaiian group, 13 of the 18 grew up in Hawai'i, and 8 of these on the island of Moloka'i.

### Setting

The island of Moloka'i in the State of Hawai'i is a small (26 x 11 miles), geographically isolated, rural community of 6,700 residents, with a relatively unique ethnic makeup. According to 1990 census data, the population on the island was 49% Native Hawaiian, 21% Filipino American, 18% European American, and 9% Japanese American (Department of Business, Economic Development, & Tourism, 1993). There are four public elementary schools on the island and one public secondary school (Grades 7 to 12). Upon our arrival in Moloka'i, a number of educators told us that despite recent improvement efforts, the Moloka'i public schools continued to experience low standardized test scores and increasing numbers of special services referrals.

### Procedure

Data for this study were collected as part of a larger collaborative project with Moloka'i High and Intermediate School. Over a nine-month period we visited the island in pairs, 1–2 days each week. Over this period of time, we conducted individual, semistructured interviews with 26 of the participants (see Appendix for interview questions). For four of the participants (two married couples) interviews were conducted in pairs. Depending on the

participants' schedules, interviews varied in length: most interviews were 1–2 hours long. Interviews were recorded on video- and audiotape.

The interviews were transcribed, and the data were analyzed using the constant comparison method of analysis (Strauss, 1987). During and immediately following each interview, we kept track of theoretical ideas in our field notes and other "memos" (Strauss, 1987). We also read through the transcripts looking for common themes among participants' responses. Throughout the data collection and analysis processes we referred to earlier notes and incorporated new information. In this way, we constantly built upon and extended our theoretical notions. We eventually identified six large categories of utterances that emerged: a) personal values, b) observed values of others; c) the cultural compatibility of schooling, d) specifically Hawaiian aspects of the community or schools, e) the success and failure of teachers, and f) the lifestyle on the island.

We coded each transcript for the six categories and held discussions about the criteria we used in our coding. Part of the process of building consensus in our coding involved two researchers coding the same transcript. A discussion about the discrepancies between the two resulted in the establishment of more precise criteria. In a similar manner, the larger categories were further coded into subcategories. For example, we further coded some utterances about "personal values" as "personal values about education." Some utterances were coded into more than one category or subcategory.

Using qualitative data analysis software, questions were asked of the coded interview data that compared participants' responses across demographic variables. For example, Hawaiian participants' responses were compared to those who were from other ethnic groups, and educators' comments were compared to those of noneducators.

## Results and Discussion

### Moloka'i, "the Friendly Isle"

Through our analysis of the interview data we identified three distinct cultural spheres that participants described. At the broadest and most common level, there is the culture of the local Moloka'i community. One of the few things that all participants agreed with was the way they characterized life on the island, the kind of lifestyle that they shared in this rural island community. The island of Moloka'i is nicknamed "the friendly isle." Participants agreed that indeed Moloka'i is a place where people are friendly and welcoming to their neighbors. As one Hawaiian participant suggested,

> . . . everybody knows everybody . . . and everybody waves at everybody. And they know if you have visitors . . . 'cause they see

somebody else driving your car or something like that and then, you know, next day you see them, "Eh, somebody was over, eh?" (T. T.)

On an island with only two grocery stores and five restaurants, people are bound to run into each other. One educator said that although he didn't participate in that many community-wide activities, he inevitably came across many isle residents all the time:

It's real nice to walk down the street, you go to the market . . . you see friends . . . Especially in the school system . . . you know a lot of the kids and see them growing up. (J. S.)

This sphere of the more general Moloka'i culture was also characterized by participants as more relaxed and slower paced. As one participant noted,

I think people who live here . . . like the slow pace . . . that easy going lifestyle where they [can] go fishing and hunting. I think the island has changed, but very little . . . That slow lifestyle over here is still the same 'cause we . . . still don't have traffic lights and all that kind of stuff (T. T.)

Participants suggested that it may be the slow, relaxed pace and isolation from the city that draws certain kinds of people to their island, and that the friendliness and warmth of the community is what brings them back:

It's . . . like you're always welcome. You can go away, stay ten years, five years, whatever . . . [And when you go back] they say, "It's nice to see you. Come over!" It's . . . like you're still a part of Moloka'i even though you're not living . . . there [anymore]. (B. G.)

We feel that these descriptions of the culture of Moloka'i represent life on the surface—life in a shared community where all residents take part as they shop, go to the beach, and walk around the town. Below this level, however, there appear to be many other subcultures that differ from each other. Two, in particular, were discussed by our informants in this study—the culture of the school community and a "more Hawaiian" home culture.

**The Values and Value of School**

Some participants characterized school values as individualistic and competitive, with an emphasis on respecting authority. At least one educator noted that the individualistic nature of schools on the island may be somewhat mediated by the more cooperative student population it serves. When participants were asked to discuss the values they felt were most important in their life, 50% (n = 6) of the Hawaiians and 44% (n = 8) of the participants from other ethnic groups specifically mentioned education as a personal value. When most of the participants talked about why education was important to them, they tended to mention that education leads to better jobs. And for many participants, like the following Filipino American man, a better job means a better life:

> Today if you don't have an education, you don't have a diploma, [you're going to miss] that job opening that's coming . . . You gotta get university . . . credit . . . no matter how smart you are . . . Education to me is important [for] all children. That's their life to lead them to a good job . . . to their future. (I. M.)

There exists a segment of the Moloka'i community, largely culturally Hawaiian, that at least tacitly encourages a lifestyle that doesn't rely on education as a stepping stone to something else. As one Hawaiian community leader said,

> If education leads to jobs, and jobs leads to money, I think the Japanese and the Filipinos really buy into that. That makes a lot of sense and therefore you should do it. [For] Hawaiians, money is not really the value. So, it's not a big deal, getting a job. More is the quality of your life, the happiness, togetherness, those things are more valuable. So I think that's basically the differences. (D. S.)

We think that D. S.'s description of a "more Hawaiian" perspective validates an alternative for Hawaiian students to posit an identity that differentiates them from mainstream cultural values. Because this alternative exists and is sanctioned by others within the community, some Hawaiian children may be, as suggested by Ogbu (1991; 1992), defying the school and its values in order to resist threats against their identity. This interpretation of Hawaiian children's defiance in school as a resistance to threats against their identity is reinforced by some participants' observations that Hawaiian students in *Papahana Kaiapuni*, the Hawaiian Language Immersion Program, are more respectful of their teachers than children in the regular school programs. Established at a grass roots level by Hawaiian community members and language activists, *Papahana Kaiapuni* is considered by many of its educators as the most culturally compatible education for Hawaiian students (Yamauchi, Ceppi, & Lau-Smith, 1999). Instruction in *Kaiapuni* classrooms is conducted almost exclusively in the Hawaiian language, and the program emphasizes Hawaiian knowledge and values (Yamauchi & Wilhelm, in press). The *Kaiapuni* program may be a model for how to mediate differences between the Hawaiian community and the Western school system.

**A Hawaiian Home Culture**

The third cultural sphere that emerged was a more Hawaiian home culture. Although the Hawaiians we interviewed represented a diverse mix of perspectives regarding different personal values (e.g., the importance of school, of community, of respecting others, of religion, and of taking care of the *'āina* or land), the most common thread among them was an emphasis on the *'ohana* or family. Fifty percent of the Hawaiian participants mentioned family as an important value, as did 33% of those from other ethnic groups. However, a closer look at what people said about their families indicated

some differences in the way Hawaiian participants talked about family compared to the way nonHawaiians did. Consistent with the literature on the differences between individualist and collectivist attitudes toward self-ingroup (Triandis, Botempo, Villareal, Asai, & Lucca, 1988), the Hawaiians in our study tended to define their "family" so as to include extended family members; whereas, the nonHawaiians talked about their "family" in a more nuclear sense. For example, an 81-year-old Hawaiian woman commented,

> I like to have them all around me. I always teach my children, my grandchildren, my great grandchildren the importance of having the family together. Sometimes my *mo'opuna* [grandchildren] stay fighting out there and I . . . say, "remember this is your brother or this is your cousin. What are you guys fighting for? Just one dinky little marble . . . family is important you guys." (Z. T.)

Another Hawaiian participant told us that he emphasizes that his children and grandchildren need to love and help their cousins, as well as their brothers and sisters. NonHawaiian participants did not mention extended family members at all.

**Perceived Incompatibility of Home and School**

We asked participants to consider the reasons why certain students on the island do not do well in school. None of our interviewees, educators and noneducators, directed the cause of student failure in school to the institution itself. Participants from all ethnic groups believed that it is the parents and the families that need to make adjustments in order for children to function more productively within the school system, rather than the school needing to better serve the community. One community member commented that

> a school is not out there to make you fail . . . you have support from education and, you know, half of the time you're going to live at home, so actually the family unit really is responsible for your education and learning. (L. K.)

Participants' comments that students and their families are responsible for problems in school reflect a "cultural deficit" model of school failure. The cultural deficit model is based on the assumption that mainstream skills and upbringing are normal, and variations among minority groups are deficits that need to be made up in some way (Rogoff & Morelli, 1989). Many educational researchers have tended to move away from a cultural deficit model and have replaced this with one of "cultural difference" (e.g., Rogoff & Morelli, 1989). The latter perspective acknowledges that schools may not be serving all students equally well, and thus, institutions may need to change their approach for different groups of people. One school staff member believed that, "school represents all the values of society, [so] when a parent does not respect those same values, the parent has a problem." (J. H.) Here again, the burden of responsibility is deferred to the students and

their parents. It is not the fault of the school if a parent or family does not ascribe to the same values as the institution. It is up to the students and parents to conform to the ways of the school.

Only one theme emerged that was counter to the general tendency to blame the home rather than the school for any home-school disparity. Several participants mentioned that new teachers who came to the island from the U.S. mainland were often unable to relate to students on the island. A former principal recalled that a mainland "teacher just wouldn't relate to some of the kids. They [the teacher] couldn't understand the language . . . they couldn't understand the culture." (C. C.) Another educator reflected that,

> all the people on the staff are [not] aware of what is happening in the community. There are too many people on the staff that haven't been [on Moloka'i] long enough and will probably not stay long enough for them to develop any kind of appreciation for the Moloka'i community. (A. B.)

Our participants believed that when the new teachers from the mainland do not understand the values of the community, they are unable to relate to the students. Some students and other community members assume that upon their arrival, teachers coming to Moloka'i from the mainland will not understand the values of the local, more general, cultural sphere. These teachers may violate the larger community values by not being friendly or generous enough with other community members or by being too aggressive, too pushy, or too individualistic. One man expressed that he "feel[s] sorry for them [the mainland teachers] because they don't know what they get themselves into because of how the local culture is." (B. G.) This expressed empathy, however, does not translate into support for the incoming teachers. In fact, the opposite reaction can often be observed in both the students and the local school community.

In an informal conversation with a well respected and longtime local teacher, we became aware of just how low the expectations for the incoming mainland teachers can be. This teacher described the annual "pool" set up by some of the local staff that gave odds as to which of the new teachers would last through the school year and which would be on a plane home before the end of the first semester. Although many local faculty are quick to claim that they do everything within their ability to help the mainland teachers adjust, they are really not expecting most of the new teachers to last. This is not surprising considering the high rate of teacher turnover on the island. Regarding teacher recruitment, the State of Hawai'i Department of Education considers Moloka'i a "geographically hard-to-fill" area (1995). However, local community members' low expectations of new teachers from the mainland do not go unnoticed by the new teachers. In a related study investigating the experiences of new teachers on Moloka'i, Ceppi (1997) found that many new teachers felt that some students and longtime school

staff members were hostile toward the new teachers and skeptical of their efforts and intentions to stay and teach on the island.

**Observed Ethnic Differences Regarding Education**

Of all the participants, 57% believed there were ethnic differences regarding the extent to which people valued education. This perspective was voiced across the community by both educators and noneducators, by people from all ethnic groups, and by those with and without a college education. Participants identified that Asians, and Japanese Americans in particular, highly valued education and emphasized this with their children. Japanese American and Filipino (both Filipino national and Filipino American) parents on the island were portrayed as pushing their children to achieve in school. One Japanese American educator who had sent her sons to O'ahu to attend a prestigious private school commented,

> To this day, I see among the Japanese the value of education. They send their kids away to the mainland. They stress even going beyond getting their Master's. That is still here. I see that . . . Now, the other groups . . . I have to say that the Japanese people are an endangered species. (A. Y.)

All of the remarks that suggested a less positive orientation toward school values referred to Hawaiians on the island. One of the Japanese American educators talked about his son being half Hawaiian and half Japanese American and the conflict this caused his son in school:

> You know, he's part of the Hawaiian community but as a Japanese, you know, you're different . . . If you are Hawaiian, you never put yourself above another Hawaiian. When he went to the high school. . . . you know, he didn't wanna be the smartest kid in school, and these kind of things . . . He will always say he's not Hawaiian. He seen the Hawaiian, he's seen that they dumb. They stick around the bathrooms and so on . . . Then, you know, it's a conflict because he's Japanese, Chinese, and you know, Hawaiian. He says "I look at the Hawaiians over here. They really stupid. I mean, look at how their homes and things like that." You know, he wasn't proud at all. But then he wanted to elevate himself. (H. Y.)

Although more nonHawaiians than Hawaiians remarked on this relationship, a few Hawaiian participants also acknowledged that some Hawaiians on the island did not appear to value Western education as much as those from other ethnic groups. As one Hawaiian educator noted,

> Yes, I mean you see the Japanese families they teach that to their kids that education is very important. Even with the Caucasians. But with the Hawaiians the percentage is probably half and half . . . There are a lot of parents that are encouraging that, and I do not see the other half as encouraging . . . I do not see it as that important maybe like "Oh, school. Yeah, school. Big deal." (D. K.)

Another Hawaiian woman, who was not an educator, agreed with D. K. and was saddened and frustrated that other Hawaiians in her community did not emphasize the importance of education, "I don't know why. I don't know why education is not number one in their house." (Z. T.)

## Conclusion

In this study, we examined the values, expectations, and educational experiences of 30 community members on the island of Moloka'i. We were interested in the ways in which Native Hawaiian participants might express values and experiences that were different from other community members, including educators on the island. Ogbu's (1992) theory suggests that as involuntary minorities, Native Hawaiians might differ from other ethnic groups in that they would not readily buy into the values and goals of Western education. We found that there was a segment within the Hawaiian community that did express opinions that were consistent with these assumptions. However, most of the Hawaiians we interviewed spoke of the importance of education for their children—the importance of high school graduation and if possible, some college education. Many also described children in their families who left the island for higher education but often returned without graduating because they were needed at home by their families or because they were unable to adjust to life in more urban or culturally different places.

One way to understand our participants' diverse and sometimes contradictory observations of their own values and those of others is to look at their relationships—culturally and socially—as existing within a multilayered system of cultural communities. In an island-wide sense, Moloka'i is a unique and somewhat homogeneous community sharing many values; but those shared lifestyle values do not necessarily include valuing education. That is, the community members often interact with and evaluate one another using criteria that do not include education as a marker of success or failure. Highly esteemed community members are not necessarily formally well educated. At the same time, the failure of new teachers from the mainland to successfully relate to students on the island is often attributed to their inability to acquire or adhere to more general, island-wide norms and values.

If the Hawaiian community values the support and close proximity of extended family members, there is an inherent tension between this value and the school's goal of sending youth off to college and away from the island. This is especially notable given the scarcity of jobs on Moloka'i[2], so that the opportunities to return are more difficult. What it means, then, to be a "good" member of a Hawaiian *'ohana* may not necessarily comply with what "good students" end up doing. Here, we feel we can apply Ogbu's (1991) and D'Amato's (1988) notions of minority students' resistance in

school. The idea that some aspects of Western schooling threaten one's identity as a Hawaiian has helped us to understand that when community members complain that students "nowadays" are disrespectful of their teachers, it may be that students today are finding a way to resist contradictory values in school to reinforce who they are.

In the past, Hawaiian students may have possibly appeared to be more respectful of educators, but this may also have been an indication of more passive, less resistant responses to what was uncomfortable or culturally inappropriate in their education. Applying Berry's framework of acculturation (Berry, 1976; Berry et al., 1987), we suggest that many Hawaiians experienced the marginalization mode of acculturation, being forced to lose their traditional culture but not desiring participation in the dominant society. Over the past thirty years there has been a resurgence in pride in the Hawaiian culture and language (Ah Nee-Benham & Heck, 1998; Linnekin, 1983). Among Hawaiian youth this "Hawaiian renaissance" may have helped to validate an identity that can now be asserted more openly in opposition to Western forms of government and education. Perhaps these young Hawaiians now display the separation mode of acculturation (Berry, 1985; Berry et al., 1987).

**Educational Implications**

Our results have a number of implications for classroom instruction and educational policy. First, we suggest that educators of Hawaiian students look to *Papahana Kaiapuni*, the Hawaiian Language Immersion Program, as a model for how to promote more culturally compatible educational experiences for their students. One of the goals of the *Kaiapuni* program is to integrate Hawaiian knowledge and values into the curriculum. One way that *Kaiapuni* educators promote this goal is by fostering school relationships that are consistent with those of the Hawaiian home culture (Yamauchi & Wilhelm, in press). For example, *Kaiapuni* teachers believe that their relationships with their students are closer and more like that of an extended family aunt or uncle (Yamauchi et al., 1999). Program educators also emphasize intergenerational relationships and capitalize on students' cultural background by facilitating student to student relationships that are similar to those of Hawaiian siblings (Yamauchi & Wilhelm, in press). These are all examples of ways that school activities could change to promote and validate students' cultural backgrounds.

Schools serving a large population of Hawaiians can also be improved by integrating a community-based approach to education. Research suggests that connecting school learning to issues of community relevance can result in a more positive school experience for at-risk students (Heath, 1983; Tharp, Dalton, & Yamauchi, 1994; Tharp, 1997). Implementing this approach could involve the development of a school-community partnership (Epstein, Coates, Salinas, Sanders, & Simon, 1997; Jones & Maloy, 1988). For example,

the Wai'anae High School Hawaiian Studies Program developed out of a partnership between the high school and an agency committed to community-based education. The primary goal of the Hawaiian Studies Program is "to empower students to become self-sufficient, productive, contributing members of their own community and of the global community, caring for the land and natural resources that make life possible" (Hawaiian Studies Program, 1997). Students participate in weekly community field work (e.g., at archaeological digs, the community health center, or in the local mountains) that is integrated with their school-based coursework. Students' research and activities provide valuable services and information to the community (Rennie, 1990). At the same time, these activities reinforce the relevance of school concepts, students' self-esteem, and local pride in the school (Berridge, 1973; Engeström, 1991; Northdurft, 1989; Resnick, 1987).

Creating school-community partnerships may provide contexts for increased community participation in educational decision making. More locally governed schools and a less bureaucratic system in general should increase participation of community members and the ability of schools to respond to local concerns and values. In their review of school policy toward Native Hawaiians, Ah Nee-Benham and Heck (1998) concluded that the heavily bureaucratic and intensely political climate of the Hawai'i Department of Education contributed to the marginalization of Hawaiians and resistance on the part of the Department to change.

> Despite the periodic policy rhetoric calling for massive change at both the federal and state levels, reform efforts in Hawai'i continue to be somewhat incremental and influenced by trends across the United States as a whole (e.g., site-based management, charter schools) as opposed to revolutionary, because the structure of the system effectively limits the scope of conflict and produces policy responses that are least disturbing to the governing structure (p. 227).

Moloka'i schools are administered by the Maui district branch of the Department of Education. Ratliffe's (1999) study of special education on the island indicated that many teachers, administrators, and parents felt that Moloka'i community members were often left out of the decision-making loop and that their issues were often subsumed by those of the larger Maui schools. Ah Nee-Benham and Heck (1998) suggest that more local control of governance and spending would significantly benefit the education of Hawaiians and other groups who are not among the political elite. We agree that more local control of governance for Moloka'i schools would allow the schools to be more responsive to their community.

Our results also suggest that a more sustained new-teacher orientation process that integrates assistance from the local community could help to retain nonlocal teachers on Moloka'i and those teaching in other rural areas of the State. A survey of Moloka'i teachers indicated that teachers leave

because of differences in culture, language, and lifestyle (Ceppi, 1997). The pressure for new teachers to adapt to many new stimuli, perspectives, and societal norms without much guidance and support can be very overwhelming and may cause them to be ineffective in their teaching (Brislin, Cushner, Cherrie, & Yong, 1986). Arriving in the islands may also mark the first time teachers experience being an ethnic minority, and many may feel isolated from family and friends. Ideally, the development of an orientation for these teachers would include participation of noneducation community members. The interactions created by joint activity between these two groups (the local community and the new teachers) would theoretically increase understanding of the other group's perspective and needs (Tharp et al., 1999).

Finally, our results suggest that there is still much to be learned and addressed regarding contemporary Hawaiian students on Moloka'i and the complexity of the negotiations that they make between the values and meanings of their school and home communities. The Moloka'i community is divided regarding the best path to a more stable economic future, centered around the question of how much development the island can support (Canan & Hennessey, 1989; Olsen, Canan, & Hennessey, 1985). The conflict of values identified by Canan and her colleagues in this community controversy is similar to what we believe some Hawaiian students may experience within themselves. That is, the value of a close extended family and the love of a quiet, rural lifestyle (that often includes more traditional and subsistence activities of hunting and fishing) conflicts with a desire to succeed in a more Western sense with markers of diplomas, high-paying jobs, and material goods. Educators want to consider ways to increase students' awareness of the potential conflicts that may arise as they plan for higher education and future careers that may take them away from the island. One possibility is to create a stronger network of alumni, so that students can interact with others who have experienced similar dilemmas regarding pursuing opportunities off the island and staying or returning home to be closer to family.

## Notes

[1]In this paper the terms "Native Hawaiian" and "Hawaiian" are used interchangeably to refer to both part-Hawaiian people and those whose ancestral heritage does not include other ethnic groups.

[2]In 1993 when this study was conducted, the unemployment rate on Moloka'i was 7.8%, almost twice that of the entire state (4.2%) (Department of Business, Economic Development, & Tourism, 1994).

## Appendix
## Interview Questions

1. What is your name? Would you spell it?
2. Do you mind sharing your age with us?
3. What do you consider to be your primary ethnicity?
4. What is your current or past occupation?
5. How far did you go in school? (What is your highest level of education, degrees if any?)
6. Are you married and do you have any children?
7. How long have you lived on Moloka'i? (If you lived somewhere else, where was it, and for how long?)
8. Did you attend school on Moloka'i? Which years?
9. How have things changed on Moloka'i since you were younger? Can you give some specific examples of similarities or differences as you remember it?
10. How have the schools on Moloka'i changed since you were younger?
11. Do you feel that Moloka'i is a community where generally everyone knows everyone else?
12. If so, how does this affect how people on this island behave?
13. Has this changed over the years that you have been living on Moloka'i?
14. Does Moloka'i have any social problems that you can identify?
15. Have those problems changed over the years that you have lived on Moloka'i?
16. How do you feel about some peoples' interests in developing tourism on Moloka'i?
17. What is different or similar about school and education now than when you were younger? Can you give some specific examples?
18. How important is education in people's lives today?
19. Do you notice any differences in educational attitudes or beliefs across ethnic lines?
20. What changes would you make in the education system or in the content of a school's curriculum to better serve the population on Moloka'i?
21. Are the values of the school compatible with the values of the home? What are the values of the school and the home?
22. Are the values that you were brought up with different than the values you see kids with today?
23. How did you learn your values?
24. What are the roles of the school and the family in teaching kids values?
25. What do you feel are the most important values in your life?
26. Are school personnel aware of community values, and is this reflected in the administration and teaching at the school?
27. How strong is the presence of Hawaiian values on Moloka'i?
28. Has the sovereignty movement affected this? If so, how?
29. Have you noticed any tensions between the school and other parts of the community?
30. How is life different for you now than you thought it would be when you were an adolescent?

## References

Ah Nee-Benham, M. K., & Heck, R. H. (1998). *Culture and educational policy in Hawai'i: The silencing of native voices.* Mahwah, NJ: Erlbaum.

Berridge, R. I. (1973). *The community education handbook.* Midland, MI: Pendell.

Berry, J. W. (1976). *Human ecology and cognitive study: Comparative studies in cultural and psychological adaptation.* New York: Sage/Halsted.

Berry, J. W. (1985). Acculturation and mental health among circumpolar peoples. In R. Fortuine (Ed.), *Circumpolar health 84: Proceedings of the sixth international symposium on circumpolar health* (pp. 305–311). Seattle: University of Washington Press.

Berry, J. W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. *International Migration Review, 21,* 491–511.

Berry, J. W., Poortinga, Y. H., Segall, M. H., & Dasen, P. R. (1992). *Cross-cultural psychology: Research and applications.* Cambridge, UK: Cambridge University Press.

Brislin, R. W., Cushner, K., Cherrie, C., & Yong, M. (1986). *Intercultural Interactions.* Newbury Park, CA: Sage.

Canan, P., & Hennesey, M. (1989). The growth machine, tourism, and the selling of culture. *Sociological Perspectives, 32,* 227–243.

Ceppi, A. K. (1997). *The development of a culture assimilator for the orientation of teachers coming to Moloka'i from the mainland.* Unpublished master's thesis. Honolulu: University of Hawai'i.

D'Amato, J. (1988). "Acting": Hawaiian children's resistance to teachers. *The Elementary School Journal, 88,* 529–544.

Department of Business, Economic Development, & Tourism. (1993). *General population and housing characteristics for the State of Hawai'i: 1990.* (Hawai'i State Data Center Report, No. 6). Honolulu, HI: Author.

Department of Business, Economic Development, & Tourism. (1994). *The State of Hawai'i data book 1993–94: A statistical abstract.* Honolulu, HI: Author.

Engeström, Y. (1991). Non scolae sed vitae discimus: Toward overcoming the encapsulation of school learning. *Learning and Instruction, 1,* 243–259.

Epstein, J. L., Coates, L., Salinas, K. C., Sanders, M. G., & Simon, B. S. (1997). *School, family, and community partnerships.* Thousand Oaks, CA: Corwin.

Foster, M. (1989). "It's cooking now": A performance analysis of the speech events of a Black teacher in an urban community college. *Language in Society, 18,* 1–29.

Goodenough, W. (1971) *Culture, language, and society.* Reading, MA: Addison-Wesley.

Hawai'i State Department of Education. (1995). *Teacher employment report 1994-1995.* Honolulu, HI: Author.

Hawaiian Studies Program. (1997). *Mission statement.* Wai'anae, HI: Author.

Heath, S. B. (1983). *Ways with words.* New York: Cambridge.

Henze, R. C., & Vanett, L. (1993). To walk two worlds—or more? Challenging a common metaphor of Native Education. *Anthropology and Education Quarterly, 24,* 116–134.

Jones, B J., & Maloy, R. W. (1988). *Partnerships for improving schools.* New York: Greenwood.

Linnekin, J. S. (1983). Defining tradition: Variations on Hawaiian identity. *American Ethnologist, 10,* 241–252.

Minick, N., Stone, C. A., & Forman, E. A. (1993). Integration of individual, social, and institutional processes in accounts of children's learning and development. In E. A. Forman, N. Minick, & C. A. Stone (Eds.), *Contexts for learning: Sociocultural dynamics in children's learning* (pp. 3–16). Oxford, UK: Oxford University Press.

Northdurft, W. E. (1989). Schoolworks: Reinventing public schools to create the workforce of the future. Washington, DC: Brookings.

Office of Hawaiian Affairs (1994). *The Native Hawaiian data book.* Honolulu, HI: Author.

Ogbu, J. U. (1991). Immigrant and involuntary minorities in comparative perspective. In M. Gibson & J. U. Ogbu (Eds.), *Minority status and schooling: A comparative study of immigrant and involuntary minorities* (pp. 3–33). New York: Garland.

Ogbu, J. U. (1992). Understanding cultural diversity and learning. *Educational Researcher,* 21, 5–14.

Olsen, M. E., Canan, P., & Hennesey, M. (1985). A value-based community assessment process: Integrating quality of life and social impact studies. *Sociological Methods and Research, 13,* 325–361.

Phelan, P., Davidson, A. L., & Cao, H. T. (1991). Students' multiple worlds: Negotiating the boundaries of family, peer, and school cultures. *Anthropology and Education Quarterly, 22,* 224–250.

Ratliffe, K. (1999). *Perceptions of special education on Moloka'i.* Unpublished doctorial dissertation, University of Hawai'i, Honolulu.

Redfield, R., Linton, R., & Herskovits, M. J. (1936). Memorandum on the study of acculturation. *American Anthropologist, 38,* 149–152.

Rennie, J. (1990). Why community education? In C. Poster & A. Kruger (Eds.), *Community education in the western world* (pp. 3–16). London: Routledge.

Resnick, L. (1987). Learning in school and out. *Educational Researcher, 18,* 5–7.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* New York: Oxford University Press.

Rogoff, B., & Morelli, G. (1989). Perspectives on development from cultural psychology. *American Psychologist, 44,* 343–348.

Scribner, S., & Cole, M. (1973). Cognitive consequences of formal and informal education. *Science, 182,* 553–559.

Strauss, A. L. (1987). *Qualitative analysis for social scientists.* Cambridge, UK: Cambridge University Press.

Takenaka, C. (1995). *A perspective on Hawaiians.* A report to the Hawai'i Community Foundation. Honolulu, HI: Hawai'i Community Foundation.

Tharp, R. G. (1997). *From at-risk to excellence: Research theory and principles for practice.* A report for the Center for Research on Education, Diversity, and Excellence (CREDE). Available from CREDE/CAL, 1118 22nd St. NW, Washington, DC 20037–1214.

Tharp, R. G., Dalton, S., & Yamauchi, L. A. (1994). Principles for culturally compatible Native American education. *Journal of Navajo Education, 3,* 33–39.

Tharp, R. G., Estrada, P., Dalton, S., & Yamauchi, L. A. (1999). *Teaching transformed: Achieving excellence, fairness, inclusion, and harmony.* Denver, CO: Westview.

Tharp, R. G., & Gallimore, R. (1988). *Rousing minds to life: Teaching learning, and schooling in social context.* New York: Cambridge University Press.

Triandis, H. C., Bontempo, R., Villareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology, 54,* 323–338.

Trueba, H. T., Jacobs, L., & Kirton, E. (1990). *Cultural conflict and adaptation: The case of Hmong children in American society.* Basingstoke, England: The Falmer Press.

Vygotsky, L. S. (1978). *Mind in society.* Cambridge, MA: Harvard University Press.

Wertsch, J. V. (1991). *Voices of the mind: A sociocultural approach to mediated action.* Cambridge, MA: Harvard University Press.

Yamauchi, L. A., Ceppi, A. K., & Lau-Smith, J. (1999, April). *On the verge of language revitalization: Educator perspectives on the Hawaiian Language Immersion Program.* Paper presented at the annual meeting of the American Educational Research Association, Montréal, Canada.

Yamauchi, L. A., & Tharp, R. G. (1995). Culturally compatible conversations in Native American classrooms. *Linguistics and Education, 7,* 349–367.

Yamauchi, L. A., & Wilhelm, P. (in press). E ola ka Hawai'i i kona 'ōlelo: Hawaiians live in their language. In D. Christian & F. Genesee (Eds.), *Case studies in bilingual education.* Alexandria, VA: TESOL.

## Authors

Lois A. Yamauchi is an associate professor in the Department of Educational Psychology at the University of Hawai'i at Mānoa and a researcher with the Center for Research on Education, Diversity, and Excellence (CREDE). Her research focuses on cultural influences on learning and the educational experiences of indigenous students and teachers.

William L. Greene is an assistant professor in the Education Department at Southern Oregon University. His research interests include ethnic and cultural influences on values, attitudes, and self-perceptions of students in school settings.

Katherine T. Ratliffe is a faculty member of the Center on Disability Studies at the University of Hawai'i at Mānoa. Her research interests include physical therapy and related services in educational settings, family partnerships in teaching about disability, and cultural influences on family and professional interactions.

Andrea K. Ceppi is a doctoral student in educational psychology at the University of Hawai'i at Mānoa. Her research interests include community-based education, teacher development, and the effects of culture on the classroom.

*Pacific Educational Research Journal*
*Vol. 10, No. 1, pp. 23–42*

# Academic Performance of Asian American Adolescents: An Exploration of the Relative Effects of Cultural and Social Capital

**Yoshimitsu Takei**
*Pennsylvania State University & University of Hawai'i at Mānoa*
**Melvin E. Clark** and **Roger Shouse**
*Pennsylvania State University*
**Shan-nan Chang**
*National Taitung Teachers College, Taiwan*

A commonly held view regarding the schooling of immigrant children is that they are academically handicapped relative to U.S. born children, due to their weaker English competency skills. This straightforward assumption has been rendered questionable by recent writings, however, which suggest a fairly complex relationship between learning English as a second language and academic performance. This paper examines the relationships between use of foreign language in the home, nativity, family socioeconomic status, and academic achievement by reviewing data obtained from Asian groups in a national longitudinal study. The substantive findings suggest that native-language use within the family seems to promote achievement for some minority groups but not for others. Furthermore, family socioeconomic status exerted the strongest and most consistent effects on the academic achievement of adolescents in all the groups studied. We conclude, therefore, that the variations among Asian ethnic groups in the United States render generalizations about Asians as an entire group to be somewhat tenuous.

The conventional view of immigrant children who lack English competency is that they are likely to encounter academic difficulties. This commonsense view has been supported by both historical accounts and earlier quantitative studies conducted mainly on Mexican American pupils. There is growing evidence, however, that this view ignores potentially positive effects of bilingualism on academic achievement, and indeed, researchers recently have identified cognitive, cultural, and social factors that are positively associated with foreign-language use and academic achievement.

We briefly review this research in order to illustrate the complexity of what originally appeared to be a rather straightforward educational problem. We then conduct an exploratory analysis of some of the primary variables using a sample of Asian American adolescents in the National Education Longitudinal Study. Asian Americans were selected to study because there has been considerable interest shown by researchers over the years in analyzing factors associated with this group's academic performance. We outline various theories which claim to explain their relatively high academic achievement and conduct a modest effort to test rival hypotheses identified in the literature.

**Asians in the United States**

The public image of Asians among the White population in the U.S. has changed rather remarkably during the last century. Around the turn of the century, Asians (primarily Chinese and Japanese) were characterized as being sly, immoral, and clannish (Lyman, 1974; Petersen, 1971). The image of Chinese among the majority population became more positive during World War II, when China became an ally of the United States in the war against Japan, Germany, and Italy. Following the war, attitudes of Whites toward the Japanese gradually grew more positive and the shift in public opinion culminated in Asian Americans being stereotyped as "model minorities" by the 1970s.

The passage of the Immigration Act of 1965, which equalized the right to immigrate to all nationalities, was a reflection of this change and was a radical departure from the earlier Immigration Act of 1924, when immigration became restricted largely to northwestern European countries. As a consequence of this equalization, most recent immigrants come from nonEuropean countries, leading mass circulation publications like *Time* magazine to claim that if the trend continues, "white Americans will become a minority group" sometime around the year 2056 (Henry, 1990).

The infusion of newcomers into this society led to an increase in the number of public-school students who learn a language other than English as their first language (National Center for Education Statistics, 1978; Natriello, McDill, & Pallas, 1990). The dominant view among educators defines this increase as a problem for both schools and the children. School

districts have been pressured by the legal system to provide bilingual classes in order that children lacking English proficiency can enjoy "equality of opportunity" (Nieto, 1992). Many school districts experience difficulty in finding certified teachers who can speak "exotic" languages such as Vietnamese, Hmong, Mandarin, and Hindi; however, so many students without English proficiency continue to be assigned to teachers who are monolingual English speakers.

Many researchers consider this situation to be detrimental to the academic performance of pupils who are limited in English proficiency (see Steinberg, Blinde, & Chan, 1984 for an extensive review of these studies). Those who think otherwise, however, believe that bilingualism promotes mental flexibility and, therefore, enhanced ability to reason. Two recent articles summarize studies that found that bilingualism has a positive effect on academic achievement controlling for family status (see Portes & Hao, 1998 and Mouw & Xie, 1999). An obvious problem with this cognitive theory is the difficulty in determining the causal link between bilingualism and academic performance. It can be argued for instance, that pupils who are academically capable are more likely to retain their native language and become bilingual as compared to students who are less academically competent and therefore more likely to lose command of their native language or to become monolingual in English. This line of reasoning blurs the positive relationships between bilingualism and academic achievement.

Another limitation of the cognitive approach to bilingualism is that retention of a native language might reflect the quality of the relationships within the family. It is possible that children who already have strong ties to their parents that are based on feelings of mutual obligations will maintain their language longer or more readily than children who do not enjoy such strong family relationships. It also is reasonable to expect that students with strong ties to their parents will perform better in school than children who are socially or culturally and emotionally detached from their parents.

It is also possible that maintenance of native language competence is related to the family's social status. For example, Portes and Hao (1998) found fluent bilinguals were likely to come from high status families. Interestingly, their data analysis showed that Asian students were more likely to abandon their native language than Latin-origin students. Their research findings might be interpreted as lending support to cognitive theory since after controlling for other factors such as socioeconomic status (SES), those who were fluent in another language besides English "retained a strong advantage in all measures of academic performance" (p. 290). Since their analysis did not have any indicators of academic ability, however, we must exercise care in accepting this finding as strong evidence supporting cognitive theory.

**Ethnic Cultural Capital**

The belief that Asians constitute a "special" minority in the United States evolved after World War II. Caudill and DeVos observed in 1956, for example, that Japanese Americans had managed to become quite successful socioeconomically despite severe racial discrimination which included forced detention in internment camps during the war. They argued that this minority had achieved "remarkable success" because the values of traditional Japanese culture were compatible with white middle-class values.

During the last twenty years, there was an abundance of academic research presenting evidence that the academic performance of Asian Americans was superior to that of White pupils (e.g., Hirschman & Wong, 1981 and 1986; Sue & Okazaki, 1990; Tsang & Wing, 1985; Peng & Wright, 1995; Farkas et al., 1990; Wong, 1990; Hao & Bonstead-Bruns, 1998). Asian students were found to be three times as likely as Whites or Blacks to enroll in the most selective colleges and universities (Owings, 1998). The common explanation for this phenomenon is to attribute Asian American success to the unique cultural aspects of Asian societies.

The theme that Asian cultures, especially those that have been influenced by Confucianism, have key elements which promote academic and socioeconomic advancement has become widely accepted in both scholarly and popular publications (e.g., Caplan, Choy, & Whitmore, 1992; "The Drive to Excel," 1984; Kao, 1995; Kao & Tienda, 1995; Petersen, 1971). This cultural theory depicts Asians as valuing family cohesion, parental authority, and effort while minimizing independence or personal autonomy, egalitarian relationships within the family, and belief in natural ability (e.g., Stevenson & Stigler, 1992; DeVos, 1973; Caplan, Choy, & Whitmore, 1992). For our purposes, we will refer to this theory as the "ethnic cultural capital" theory to distinguish it from the more general theory of cultural capital, to be discussed later.

Stated briefly, "ethnic cultural capital" refers to those attitudes, values, and behaviors embedded in a culture which facilitate the process of socioeconomic attainment and promote academic achievement. We believe it is appropriate to label this theory "ethnic cultural capital" because the entire ethnic group is presumably influenced by the same traditional cultural values regardless of the social status of the family.

Other less known cultural explanations stress the importance of situational factors over the impact of traditional cultural values in shaping the attitudes and behaviors of immigrants. They include "immigrant optimism," theory and "relative functionalism." Immigrant optimism theory proposes that voluntary immigrants come to the country hoping to see their children prosper. Popularized by John Ogbu (1987 and 1992), this theory hypothesizes that immigrants come to the United States because this country offers more opportunities to get ahead than does their native country. While the adults may suffer underemployment or low wages due to their

deficiency in English, they believe that their children will be successful if they learn English and do well in school. Ogbu argues that this parental optimism promotes a motivation among the children to do well in school.

The results of a recent study lend some support to Ogbu's ideas, especially among Chinese and Korean immigrants but points to conflicting evidence for Mexican immigrants (Hao & Bonstead-Bruns, 1998). The study's results suggest that not all immigrant groups exhibit "immigrant optimism" because their objectives for immigrating may differ. Thus, while most Asians are depicted as immigrating to the United States to settle here permanently, many Mexican immigrants are perceived as hoping to return to their country where they can live comfortably with money they saved while working in the United States.

Another cultural theory based on situational factors is "relative functionalism." Sue and Okazuki (1990), who are credited with coining the term, proposed that the well known tendency for Asian Americans to pursue either science or mathematics majors in college results from Asian immigrants being acutely aware that race can be an obstacle to obtaining well paying jobs. Asian immigrants, therefore, encourage their children to excel in subjects which lead to careers which maintain clear educational requirements for entry. Positions that are based on having studied either science or mathematics, such as engineering or computer science, are considered to be more "racially neutral" than fields where the appearance of the job applicant might be an important factor and may influence hiring decisions.

We feel justified in labeling immigrant optimism and relative functionalism as cultural theories because they reflect attitudinal and behavioral outcomes of a group of people whose members find themselves placed in a common situation. We suspect that attitudinal and behavioral outcomes among groups may differ somewhat based on the cultural traditions of a specific group. It seems that most Cuban and Vietnamese immigrants encourage patterns of selective acculturation (learning skills that foster achievement) among their children, for example, but Mexican immigrant children are likely to exhibit either resistance to functional acculturation (e.g., not learning English because they expect to return to Mexico) or dissonant acculturation (adopting urban underclass styles and an adversarial stance towards middle-class White culture) (Portes & Rumbaut, 1996). The latter response results in some Mexican American children learning "not to learn" school knowledge by denying the value of education (Matute-Bianchi, 1986). These examples of differing "group positions" of Cuban, Vietnamese, and Mexican immigrants vis-à-vis the dominant group in this country, illustrate how differences in orientations and situational factors lead to behaviors that vary by ethnicity.

**Social-Class Cultural Capital**

A rival to the ethnic cultural capital theory downplays the uniqueness of Asian cultures, stressing instead the importance of parental education or family socioeconomic status in influencing academic achievement. Since the days of Plato and Aristotle, scholars interested in social stratification have been debating the fundamental basis of unequal attainment among persons. Earlier debates centered around issues such as the role of ability versus familial resources and the degree to which the process of attainment was meritocratic. Recently, Pierre Bourdieu's suggestion that differences in cultural capital substantially explain unequal academic achievement has gained considerable attention. Bourdieu (e.g., 1986) argued that high SES children are advantaged in schools to the extent that their families' cultural knowledge parallels that which is valued by the educational system. The influence of Bourdieu's thinking can be seen in extensive recent publications that utilize the concept of cultural capital.[1]

A number of empirical studies suggest that family SES is an important factor in influencing the academic performance of Asian American pupils. Hirschman and Falcon (1985), for example, examined educational attainment among racial and ethnic groups in the United States and reported that among those aged 25 or older, Jews have the highest average years of formal schooling, followed closely by Asians. Hirschman and Falcon reported that parental education (an indicator of SES) explained almost all of the observed differences in educational attainment by group identification. Since Asian Americans reported that their parents' attainment was higher than that of the average for the sample, this largely explained the superior attainment of Asian Americans. Recent comparisons of Asian American pupils' grades and test scores with those of other racial and ethnic groups, controlling for family characteristics, reveal that Asian American student performance is largely a result of parental education being high (Kao, 1995; Fejgin, 1995). We shall call this the "social-class cultural capital" theory since the important factor is variation in family social class and not the ethnic cultural capital discussed earlier.[2]

In this discussion of the effects of family status on children's performance in schools, it is necessary to point out the importance of nativity in creating variations in educational attainment among adults of different Asian groups in the United States. The 1980 census showed that the percentage of the 25 years old or older population born in the United States with four or more years of college education was 41.5 for Chinese, 27.2 for Japanese, 26.8 for Koreans, and 14.8 for Filipinos.[3] By comparison, of those who migrated to the U.S. between 1975 and 1980, the percentage with four or more years of college education was 33.0 for Chinese, 48.5 for Japanese, 28.1 for Koreans, and 41.6 for Filipinos. These figures show that Japanese and Filipino immigrants during those years tended to be more highly educated than the U.S. born members of their ethnic group (Kan & Liu, 1986).

**Social Capital**

The concept of social capital is a potentially useful means of understanding the influence adults exert on young people. James S. Coleman (1987; 1988; Coleman & Hoffer, 1987), who has been largely responsible for the widespread dissemination of this concept, defined the term as incorporating "the norms, the social networks, and the relationships between adults and children that are of value for the child's growing up" (1987, p. 36). Coleman included the community in his broad definition of social capital. To illustrate the importance of social capital Coleman reported data showing private religious schools had lower drop-out rates and higher achievement test scores than public schools with similar demographic characteristics. He reasoned that the parents of adolescents in private religious schools were able to exert greater influence over their children than parents of similar religious affiliation whose children attended public schools because they enjoyed greater solidarity with both the staff and other parents whose children attended the same religious school (Coleman, 1987).

A recent study of the Vietnamese community in New Orleans lends support to the theory that social capital promotes academic performance (Bankston & Zhou, 1995). This study showed that the adolescents in the community who could read and write Vietnamese fluently were more likely to spend longer hours doing homework and receive better grades than their peers who were weak in reading and writing their native language. Bankston and Zhou concluded that native-language competence supports stronger ties between adolescents and adults in an ethnic community. They further hypothesized that strong intergenerational ties promote an adolescent's desire to do well academically because the adults within the community are likely to emphasize the value of education.

Another well known study that illustrates the importance of social capital in school is an ethnographic account of Punjabi immigrants to Northern California. Gibson (1988) reported that the parents, worried their children would become Americanized if left to their own devices, demanded that their children speak their native language in the home and discouraged their children from developing friendships with American children. The parents encouraged their children to excel in school but also insisted that their children identify with their ethnic community. Gibson invented the phrase "accommodation without assimilation" to describe the group position of the Punjabi adults in her study, but the concept of social capital also seems appropriate to describe their attitudes and behaviors concerning child-rearing.

We conclude this section by pointing out that studies which document the positive effects of native-language competence on specific groups of immigrant children's school performance provide an important corrective to the more common assumption that use of a foreign language in the home handicaps academic performance. The studies, however, pose the interesting

question of whether the academic achievement of Asian American pupils is mostly attributable to family SES (social-class cultural capital) or some combination of ethnic cultural capital and ethnic social capital.

We take it as a given that the Asian American population is extremely heterogeneous. In addition to the various Asian nationalities represented in this population, there are many languages and dialects within a single political entity like India. Asian Americans also differ widely in their educational and occupational status and live in diverse demographic contexts (Portes & Rumbaut, 1996). Living in an ethnic enclave and having a tight network of kin and friends are obviously a different social and cultural context than living in a virtually all-White suburb. In order to make this study manageable, we make a series of assumptions that guide our data analysis.

## Statement of the Problem

We assume that when children of Asian immigrants are born and raised in the United States, they are likely to become acculturated to American culture and to lose facility with their parents' native language. This may lead to a weakening of ties to their ethnic community and considerable loss of ethnic cultural and social capital. If, however, their parents are of high SES, then these children are likely to acquire their parents' social-class cultural capital which serves as a substitute for ethnic cultural capital (e.g., the middle-class Japanese American adolescents described in an ethnographic study of a high school in California [Matute-Bianchi, 1986]). On the other hand, Asian children who are able to retain facility with their native language regardless of nativity may be more influenced by the cultural capital of their ethnic group than those who do not use their native language. They are also likely to possess some of their ethnic group's social capital.

In our data analysis, we utilize foreign-language use in the home as an indicator of the existence of ethnic cultural and social capital. Since Coleman's definition of social capital incorporates norms and values, it seems reasonable to assume that the pupil who uses his/her native language in the family has had some exposure to his/her traditional culture. Therefore, if there is a stronger association between foreign-language use and achievement than family SES and achievement, then we can conclude that ethnic cultural capital seems to be a more influential factor than social-class cultural capital for that group.

## Data and Variables

The data used in this paper come from the National Education Longitudinal Study (NELS) of 1994. The first survey was conducted in 1988 with a nationally representative sample of 24,599 eighth graders. These pupils were resurveyed every two years. Oversampling of Asian and Pacific Islander (API) pupils resulted in 1,527 pupils so identified being included in the 1988 sample. The 1994 data set provided information about postsecondary schooling for those in the initial survey. Due to attrition, however, the number of API pupils in 1994 is smaller than in 1988.

The dependent variables used in this paper are the pupils' self-reported grade-point average (GPA), the combined mathematics and reading test scores (ACH), and the postsecondary educational activities (PSE) of the respondents who were resurveyed in 1994. The GPAs in the data set ranged from 0.5 to 4.0. The test scores labeled ACH come from the standardized test composite of reading and mathematics scores ($M = 50$, $SD = 10$) as reported in the NELS data.[5] The PSE categories were recorded and ranged from no postsecondary education (low) to working on a bachelor's degree (high).

Deciding which nationality/ethnic groups to include in our analysis as an independent variable was difficult. The NELS survey identified Asian and Pacific Islander pupils as Chinese, Japanese, Korean, South Asian (Asian Indian, Pakistani, Bangladeshi, and Sri Lankan), Filipino, Southeast Asian, Pacific Islander, West Asian, and Middle Eastern. In order to make the analysis more manageable, it was decided to eliminate respondents from western Asia. The analysis was therefore restricted to Chinese, Filipino, Japanese, Korean, and Southeast Asian pupils (983 cases in 1988 and 652 cases in 1994). The last category includes Vietnamese, Cambodians, Laotians, Hmong, etc. and is, therefore, a very heterogeneous group. Since many of them came recently as political refugees, they were included to provide a contrast to the other groups who were motivated to immigrate primarily for economic reasons.

We used two indicators of ethnic cultural capital. The first is use of language in the home. We assumed that if the pupil was categorized in the data set as using a foreign language in the family either exclusively or mixed with English, he or she was using his or her parents' native language and that it was the first language the pupil learned. Our second indicator of ethnic cultural capital was nativity. We assumed that respondents born outside the United States were more likely than those born in the United States to have had more exposure to their ethnic culture.[6]

Home language use was recoded so "1" represented use of only English, "2" a mix of English and a foreign language, and "3" nonEnglish only. Family SES was assigned by the NELS staff and based upon information supplied by the parents about their own education and occupational attainment. A particular SES quartile was based on the distribution of SES for

the entire sample with "1" as low and "4" as high. Nativity was simply dichotomized as "1" for those born in the United States and "2" for those born outside the United States. Gender was coded "1" for males and "2" for females.

## Results

The descriptive statistics for the groups selected for analysis are presented in Table 1. The Chinese and Korean adolescents had the highest mean GPA (tied at 3.37) and the Japanese the lowest (3.14). Koreans had the highest mean scores in the achievement tests, followed by the Chinese. The Southeast Asian group had the lowest achievement test scores.

Those whose families used a foreign language exclusively had the highest GPA (3.37), and those who only used English had the lowest (3.11). Furthermore, those Asian American adolescents whose families used only

TABLE 1
*Descriptive Statistics of Selected Asian American Pupils in the NELS Data Set*

| Background variables | | | GPA (1988) | | ACH (1988) | | PSE (1994) | |
|---|---|---|---|---|---|---|---|---|
| | *n* (1988) | *n*[a] (1994) | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Ethnicity | | | | | | | | |
| Chinese | 268 | 179 | 3.37 | .65 | 56.88 | 10.29 | 5.77 | 2.14 |
| Filipino | 248 | 157 | 3.21 | .68 | 53.07 | 9.98 | 4.56 | 2.34 |
| Japanese | 85 | 53 | 3.14 | .78 | 55.60 | 9.71 | 4.85 | 2.46 |
| Korean | 171 | 116 | 3.37 | .67 | 58.18 | 9.96 | 5.64 | 2.18 |
| S.E. Asian | 211 | 147 | 3.34 | .65 | 51.91 | 9.00 | 5.00 | 2.40 |
| *N* | 983 | 652 | | | | | | |
| Home language | | | | | | | | |
| Foreign | 136 | 97 | 3.37 | .63 | 54.71 | 9.28 | 5.27 | 2.36 |
| Mixed | 681 | 444 | 3.34 | .66 | 55.17 | 10.36 | 5.26 | 2.28 |
| English | 166 | 111 | 3.11 | .75 | 54.34 | 9.73 | 4.93 | 2.49 |
| SES quartiles | | | | | | | | |
| 1 low | 178 | 115 | 3.26 | .66 | 49.64 | 8.28 | 4.79 | 2.43 |
| 2 | 200 | 133 | 3.18 | .67 | 51.69 | 9.28 | 4.59 | 2.47 |
| 3 | 212 | 146 | 3.19 | .73 | 53.69 | 9.35 | 5.08 | 2.34 |
| 4 high | 393 | 258 | 3.45 | .63 | 59.73 | 9.60 | 5.78 | 2.07 |
| Nativity | | | | | | | | |
| NonU.S. | 573 | 368 | 3.32 | .66 | 52.93 | 9.47 | 5.04 | 2.36 |
| U.S. | 410 | 284 | 3.29 | .71 | 57.81 | 10.29 | 5.42 | 2.26 |
| Gender | | | | | | | | |
| Male | 501 | 368 | 3.23 | .66 | 54.86 | 10.52 | 5.13 | 2.37 |
| Female | 410 | 284 | 3.29 | .71 | 55.08 | 9.67 | 5.28 | 2.29 |

[a]*Due to attrition, many students from 1988 were no longer in the NELS sample by 1994.*

English at home had the lowest mean test scores and were least active in pursuing postsecondary schooling. These patterns are consistent with the hypothesis that foreign-language use is an indicator of either ethnic cultural capital or social capital and therefore promotes academic achievement.

On the other hand, the influence of family SES is also quite evident in this table. The adolescents whose families are categorized as belonging to the highest SES quartile were most likely to receive high grades, score high on the achievement test, and pursue higher education. It should be noted, however, that the educational performance of pupils from families assigned to the lowest SES quartile seem to be equivalent to those in the next higher quartile.

Table 1 also shows that being born in the United States seemingly confers an advantage in taking tests and pursuing postsecondary education, although the foreign-born Asian American pupils seem to receive grades that are comparable to those who are native born. Females seem to outperform males in test scores and in continuing their postsecondary education; the differences, however, are small. Subsequent analysis showed that the effect of gender was minimal, so it was dropped as an independent variable.

In Table 2, we present the zero-order correlations between the variables used in this analysis. As expected, the correlations between GPA, test scores (ACH), and attending postsecondary schools (PSE) are strongly positive for all Asian American nationality/ethnic groups (.59 to .34). It is worth noting that these correlations are weakest for the Japanese American group. The correlations between these variables and family SES are also positive for all the Asian nationality/ethnic groups in this sample.

Most of the correlations between nativity and the variables entered earlier are negative, indicating that the U.S. born adolescents seem to perform a little better in schools than those adolescents born abroad. This was particularly true for the Chinese and Filipinos among whom the negative correlations between being born outside the United States and achievement test scores were quite strong (-.31 for Chinese and -.29 for Filipinos).

The relationship between language use in the home and the other variables showed wide variations among the different nationality/ethnic groups. The negative correlation between SES and language use suggests that high SES Chinese families are likely to use English in the home. The negative correlation between nativity and language use among the Koreans seems to indicate that many foreign-born Korean immigrants also use English in the home. This finding seems somewhat inconsistent with the results of a survey of Koreans living in Los Angeles, which found that regardless of the length of residence in the United States, a high proportion of their respondents subscribed to Korean-language newspapers, preferred to associate only with Koreans, and wanted their children to learn the Korean language. In that survey only a third (33.8%) were certain that they would

remain in the United States, while about one half of the sample indicated a desire to return to Korea (Hurh & Kim, 1984).

Collectively, the use of a foreign language is positively correlated with GPAs, but this relationship is statistically significant (at the .05 level) only for the Southeast Asians. Using a foreign language in the home is negatively correlated with achievement test scores among Chinese and Koreans but positively correlated with test scores among the other nationality/ethnic groups. These correlations, however, are rather weak except for Koreans ($r$ = -.19). The relationship between use of a foreign language and postsecondary schooling is generally weak. There is a positive correlation

TABLE 2
*Zero-Order Correlations by Ethnicity*

| Ethnicity | ACH | PSE | SES | Nativity | Language |
|---|---|---|---|---|---|
| Chinese | | | | | |
| GPA | .50*** | .39*** | .27*** | -.01 | .05 |
| ACH | | .38*** | .57*** | -.31*** | -.08 |
| PSE | | | .30*** | -.06 | -.05 |
| SES | | | | -.36*** | -.20*** |
| Nativity | | | | | .24*** |
| Filipino | | | | | |
| GPA | .45*** | .37*** | .24*** | .01 | .09 |
| ACH | | .39*** | .37*** | -.29*** | .01 |
| PSE | | | .24** | -.26*** | .02 |
| SES | | | | -.16* | .14* |
| Nativity | | | | | .05 |
| Japanese | | | | | |
| GPA | .42*** | .37** | .22* | .06 | .17 |
| ACH | | .34* | .29** | .02 | .15 |
| PSE | | | .33* | -.10 | -.01 |
| SES | | | | -.09 | .08 |
| Nativity | | | | | .38*** |
| Korean | | | | | |
| GPA | .59*** | .43*** | .17* | -.12 | .10 |
| ACH | | .53*** | .36*** | -.14 | -.19* |
| PSE | | | .23* | -.12 | .14 |
| SES | | | | -.21** | -.08 |
| Nativity | | | | | -.16* |
| S.E. Asian | | | | | |
| GPA | .46*** | .50*** | .17* | .12 | .17* |
| ACH | | .52*** | .36*** | -.13 | .05 |
| PSE | | | .24** | .17* | .17* |
| SES | | | | -.13 | -.09 |
| Nativity | | | | | .16* |
| All Groups | | | | | |
| GPA | .48*** | .42*** | .18*** | .02 | .11*** |
| ACH | | .45*** | .43*** | -.24*** | .01 |
| PSE | | | .24*** | -.08* | .04 |
| SES | | | | -.32*** | -.10*** |
| Nativity | | | | | .14*** |

* $p < .05$. ** $p < .01$. *** $p < .001$.

only among Koreans ($r$ = .14) and Southeast Asians ($r$ = .17), of which only the latter is statistically significant.

Table 3 presents the results of a regression analysis of the dependent variables of GPA, test scores (ACH), and postsecondary experience (PSE) by nativity, language in the home, and family SES for the Asian American groups. To enable the effects of these variables to be compared with one another on the same scale, Table 3 presents standardized beta coefficients. Scanning across Table 3 reveals SES to be the most consistent and powerful predictor of variations among dependent variables for all groups. Use of a foreign language in the home has significant positive effects on the test scores only for Koreans ($b$ = .22). For Southeast Asians, the family using a foreign

TABLE 3
*Ordinary Least Square Regressions of GPA, ACH, & PSE on Selected Variables by Ethnicity*

| Ethnicity / Variable | GPA ($b$) | ACH ($b$) | PSE ($b$) |
|---|---|---|---|
| Chinese | | | |
| Nativity | .08 | -.13[a] | .06 |
| Language | .09 | .06 | .03 |
| SES | .32[a] | .53[a] | .33[a] |
| *Adj.* $R^2$ | .08 | .33 | .08 |
| Filipino | | | |
| Nativity | .04 | -.24[a] | -.22[a] |
| Language | .06 | -.03 | .00 |
| SES | .24[a] | .34[a] | .20[a] |
| *Adj.* $R^2$ | .05 | .18 | .09 |
| Japanese | | | |
| Nativity | .03 | .00 | -.10 |
| Language | .14 | .12 | .04 |
| SES | .21[a] | .28[a] | .33[a] |
| *Adj.* $R^2$ | .04 | .07 | .06 |
| Korean | | | |
| Nativity | -.07 | -.03 | -.04 |
| Language | .10 | .22[a] | .15 |
| SES | .16[a] | .37[a] | .24[a] |
| *Adj.* $R^2$ | .03 | .16 | .06 |
| Southeast Asian | | | |
| Nativity | .11 | -.10 | .20[a] |
| Language | .17[a] | .10 | .18[a] |
| SES | .20[a] | .35[a] | .31[a] |
| *Adj.* $R^2$ | .06 | .13 | .12 |

[a]*Coefficient is at least twice its standard error.*

language at home positively affects the child's GPA ($b$ = .17) and postsecondary education ($b$ = .18), but not test scores. There is very little influence of language used at home on the dependent variable among the other national/ethnic groups.[7]

Being born abroad has a negative effect on Chinese adolescents' test scores ($b$ = -.13) but a positive effect on the postsecondary education of Southeast Asians ($b$ = .20). Among Filipinos, foreign birth has a negative impact on achievement test scores ($b$ = -.24) and postsecondary schooling ($b$ = -.22). Being born outside the United States, however, has a positive influence on postsecondary education of Southeast Asian adolescents.

## Discussion and Conclusion

We have explored, in this paper, whether the academic achievement of Asian American pupils is related to their ethnic culture or to advantages conferred by the socioeconomic attainment of their parents. Neither nativity nor foreign language use in the home revealed a clear and consistent positive influence among the different Asian groups. Variations in grades, test scores, and postsecondary education attributable to either variable are quite modest and, in most cases, statistically insignificant. It is fairly clear, however, that the family's SES is far more powerful in affecting academic performance than either nativity or language used in the home.

This study's findings, therefore, are consistent with the findings reported by Hirschman and Falcon (1985) and Kao (1995) that the so-called extraordinary educational achievement of Asian American pupils is largely due to the socioeconomic attainment of their parents or, to put it in another way, the social-class cultural capital of the family rather than their ethnic cultural capital.

The assumption that native-language competency is an indicator of the ethnic cultural and social capital available to the adolescent seems to be valid only for Koreans and Southeast Asians. This may result from the documented tendency among Koreans and Southeast Asians to establish ethnic enclaves or communities, wherein use of the native language serves to maintain ethnic networks which provide social capital to adolescents (Hurh & Kim, 1984; Caplan, Choy, & Whitmore, 1992; Bankston & Zhou, 1995). In contrast, it has been claimed that Filipinos do not form enclaves with other Filipinos (Agbayani-Siewert & Revilla, 1995). Knowing a Filipino dialect, therefore, would not be very valuable as a resource to create social capital.

The Japanese population in this country has many adolescents who, as fourth- or fifth-generation Americans, are quite assimilated culturally. Use of the Japanese language within the family, therefore, would be quite atypical for most Japanese American pupils, and its use in the family probably indicates that at least one of the parents grew up in Japan. We do not have an adequate explanation, however, why using nativity and home-language use

in a regression analysis show virtually no effect of these variables on school performance of pupils who identified themselves as being of Japanese ancestry.

The Chinese population may be one of the most culturally and socially heterogeneous minority groups in the United States. It includes many recent immigrants as well as those who are fourth or fifth generation in this country. It includes immigrants from different parts of China who speak different dialects. Some Chinese live in Chinatown and have access to ethnic culture and social capital, while other Chinese live in affluent White suburbs. While there are Chinese who work in sweatshops and Chinese restaurants, there are other Chinese, both immigrant and U.S. born, who are highly placed professionals, managers, and technicians. We should not be surprised, therefore, that a clear pattern does not emerge for them.

Based on our findings, it is reasonable to accept the conclusion that the social-class cultural capital theory (the effect of SES on educational performance) seems more useful than theories about ethnic cultural differences in explaining Asian Americans' academic achievement. This conclusion could be the result of not being able to directly test the influence of ethnic cultural variables. Most large-scale surveys tend to include items that measure factors which have been shown to affect attitudes and behaviors among the majority population (e.g., Goyette & Xie, 1999) and, consequently, are less likely to include items that measure factors which are uniquely important to certain minority groups. In the case of Asian Americans, questionnaires that include items which measure individual autonomy versus family cohesion, egalitarianism versus respect for parental authority, and perceived importance of effort versus natural ability may be variables that are more directly associated with academic achievement than native language use. Had the NELS study included such variables to directly measure cultural differences between Asians and Whites, the amount of variation in academic achievement explained in our analysis conceivably could have been larger.

## Author Note

We wish to thank Paula Takei for her editorial contributions to this paper. The anonymous reviewers also made valuable suggestions to improve the coherence of this work. The data utilized in this paper were made available by the National Center for Education Statistics. Neither the Center nor the U.S. Department of Education bears any responsibility for the analysis or interpretation presented here.

## Notes

[1]What undoubtedly contributed to the rapid adoption of the concept of cultural capital is the way it seems to conveniently "explain" variations in school outcomes (e.g., grades, test scores, and years of school completed) that are related to family SES without actually testing for differences in cultural capital among the people being studied. In other words, it is common practice among researchers to assume that differences in SES indicate differences in cultural capital. This paper also adopts this common practice.

[2]Those who have been critical of studies depicting Asian Americans as "model" minorities share this theoretical framework. By presenting evidence that not all Asian Americans are succeeding in this society (e.g., high rates of underemployment, numbers of Asians receiving welfare, percentage of Asians earning incomes below the poverty line), they argue that many Asian immigrants are not adapting successfully to their new lives in a foreign society (Kan & Liu, 1986; United States Commission on Civil Rights, 1980; Wong, 1986). The basic assumption underlying much of this literature is that Asian Americans are subjected to racial discrimination in the labor market. However, since most of the Asian immigrants who are financially disadvantaged are those with low levels of formal schooling, those who argue against the "model" minority thesis oppose the "unique" Asian culture theory and seem to support social-class theory (see Macias, 1993).

[3]The number of Vietnamese born in the United States was too small for reliable estimates to be made.

[4]The schools in the 1988 sample excluded 175 Asian students due to limited English proficiency (LEP). However, about the same number of LEP students were surveyed in the base-year sample. The subsequent follow-up surveys recaptured most of the excluded pupils in the base-year survey as well as included more LEP students through a procedure called "freshening." Two hundred thirty-six LEP pupils were added to the original sample, and most of them are included in the 1994 data set, which was used in this study. The number of cases in the 1994 data set is considerably smaller than the 1988 base-year sample due to attrition (*NELS:88*, 1994).

[5]Both GPA and ACH had mean values substituted for missing values. This added 8 pupils for GPA and 22 pupils for ACH who otherwise would have been dropped from the analysis.

[6]Since we were not interested in testing the cognitive theory of bilingualism on academic performance, we did not take language fluency into account in our data analysis. Use of foreign language in the home is relied upon as an indicator of exposure to the traditional culture of the pupil's ethnic group, which, some people believe, has a positive effect on school performance, as well as relationship with parents that is tied somewhat to their traditional culture.

[7]This result is consistent with that of a recent study that examined the relationship between bilingualism and academic achievement among Asian American pupils and reported that fluent bilinguals do not perform any better academically than those who are monolingual in English (Mouw & Xie, 1999).

## References

Agbayani-Siewert, P., & Revilla, L. (1995). Filipino Americans. In P. G. Min (Ed.), *Asian Americans: Contemporary Trends and Issues* (pp. 134–168). Thousand Oaks, CA: Sage.

Bankston, L., III, & Zhou, M. (1995). Effects of minority-language literacy on the academic achievement of Vietnamese youths in New Orleans. *Sociology of Education, 68*(1), 1–17.

Blumer, H. (1961). Race prejudice as a sense of group position. In J. Masuoka & P. Valien (Eds.), *Race relations: Problems and theory* (pp. 215–227). Chapel Hill: The University of North Carolina Press.

Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education* (pp. 241–258). New York: Greenwood Press.

Caplan, N., Choy, M. H., & Whitmore, J. K. (1992). Indochinese refugee families and academic achievement. *Scientific American, 266*(2), 36–42.

Caudill, W., & DeVos, G. (1956). Achievement, culture and personality: The case of the Japanese Americans. *American Anthropologist, 58*, 1102–26.

Coleman, J. S. (1987). Families and schools. *Educational Researcher, 16*(6), 32–38.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American Journal of Sociology, 94* (Supplement), S 95–S 120.

Coleman, J. S., & Hoffer, H. (1987). *Public and private high school: The impact of communities*. New York: Basic Books.

DeVos, G. A. (1973). *Socialization for achievement: Essays on the cultural psychology of the Japanese*. Berkeley: University of California Press.

The drive to excel. (1984). *Newsweek on Campus*. April, 4–13.

Farkas, G., Grobe, R. P., Sheehan, D., & Shuan, Y. (1990). Cultural resources and school success: Gender, ethnicity and poverty groups within an urban district. *American Sociological Review, 55*(1), 127–42.

Fejgin, N. (1995). Factors contributing to the academic excellence of American Jewish and Asian students. *Sociology of Education, 68*(1), 18–30.

Gibson, M. A. (1988). *Accommodation without assimilation*. Ithaca, NY: Cornell University Press.

Goyette, K., & Xie, Y. (1999). Educational expectations of Asian American youths: Determinants and ethnic differences. *Sociology of Education, 72*(1), 22–36.

Hao, L., & Bonstead-Bruns, M. (1998). Parent-child differences in educational expectations and the academic achievement of immigrant and native students. *Sociology of Education, 71(3)*, 175–198.

Henry, W. A., III. (1990). Beyond the melting pot. *Time,* 135 (April 9), 28–31.

Hirschman, C., & Falcon, L. (1985). The educational attainment of religion-ethnic groups in the United States. In A. C. Kerchkhoff (Ed.), *Research in Sociology of Education and Socialization, 5,* (pp. 83–120).

Hirschman, C., & Wong, M. G. (1981). Trends in socioeconomic achievement among immigrant and native-born Asian Americans, 1960–1976. *Sociological Quarterly, 22,* 495–513.

Hirschman, C., & Wong, M. G. (1986). The extraordinary educational attainment of Asian Americans: A search for historical evidence and explanations. *Social Forces, 65*(4), 1–27.

Hurh, W. M., & Kim K. C. (1984). *Korean immigrants in America.* London: Associated University Press.

Kan, S. H., & Liu, W. T. (1986). The educational status of Asian Americans: An update from the 1980 Census. In N. Tsuchida (Ed.), *Issues in Asian and Pacific American education* (pp. 1–11). Minneapolis: University of Minnesota, Asian/Pacific American Learning Resource Center.

Kao, G. (1995). Asian Americans as model minorities? A look at their academic performance. *American Journal of Education, 103*(2), 121–159.

Kao, G., & Tienda, M. (1995). Optimism and achievement: The educational performance of immigrant youth. *Social Science Quarterly, 76*(1), 1–19.

Lyman, S. M. (1974). *Chinese Americans.* New York: Random House.

Macias, J. (1993). Forgotten history: Educational and social anecdotes of high achievement among Asian immigrants in the United States. *Curriculum Inquiry, 23*(4), 399–432.

Matute-Bianchi, M. E. (1986). Ethnic identities and patterns of school success and failure among Mexican-descent and Japanese-American students in a California high school: An ethnographic analysis. *American Journal of Education, 95*(1), 233–55.

Mouw, T., & Xie, Y. (1999). Bilingualism and the academic achievement of first and second generation Asian Americans: Accommodation with or without assimilation? *American Sociological Review, 64*(2), 232–252.

National Center for Education Statistics. (1978). The educational disadvantage of language-minority persons in the United States, Spring 1976. *NCES Bulletin.* 78–B–4.

Natriello, G., McDill, E. L., & Pallas, A. (1990). *Schooling disadvantaged children: Racing against catastrophe.* New York: Teachers College Press.

*NELS:88 Public release with electronic codebook and users manuals* [CD-Rom]. (1994). Washington, DC: National Center for Education Statistics [Producer and Distributor].

Nieto, S. (1992). *Affirming diversity.* New York: Longman.

Ogbu, J. U. (1987). Variability in minority school performance: A problem in search of an explanation. *Anthropology of Education Quarterly, 18*(4), 312–334.

Ogbu, J. U. (1992). Understanding cultural diversity and learning. *Educational Researcher, 21*(8), 5–14.

Owings, J., Madigan, T., & Daniel, B. (1998). *Who goes to America's high ranked 'national universities'?* Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.

Passow, A. H. (Ed.). (1963). *Education in depressed areas*. New York: Teachers College, Columbia University.

Peng, S. S., & Wright, D. A. (1994). Explanation of academic achievement of Asian American students. *Journal of Educational Research, 87*(6), 346–352.

Peterson, W. (1971). *Japanese Americans*. New York: Random House.

Portes, A., & Hao, L. (1998). Bilingualism and loss of language in the second generation. *Sociology of Education, 71*(4), 269–294.

Portes, A., & Rumbaut, R. G. (1996). *Immigrant America: A portrait* (Rev. 2nd ed.). Berkeley: University of California Press.

Steinberg, L., Blinde, P. L., & Chan, K. S. (1984). Dropping out among language minority youth. *Review of Educational Research, 54*(1), 113–132.

Stevenson, H. W., & Stigler, J. W. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education*. New York: Summit Books.

Sue, S., & Okazaki, S. (1990). Asian-American educational achievements: A phenomenon in search of an explanation. *American Psychologist, 45*(8), 913–920.

Tsang, S. L., & Wing. L. C. (1985). *Beyond Angel Island: The education of Asian Americans*. ERIC/CUE Urban Diversity Series, Number 90.

United States Commission on Civil Rights. (1980). *Success of Asian Americans: Fact or fiction?* Clearinghouse Publication, 64.

Wong, M. G. (1986). Post-1965 Asian immigrants: Where do they come from, where are they now, and where are they going? *Annals, 487* (September), 150–168.

Wong, M. G. (1990). The education of White, Chinese, Filipino and Japanese students: A look at 'High School and Beyond.' *Sociological Perspectives, 33*(3), 355–374.

## Authors

Yoshimitsu Takei retired from Pennsylvania State University after teaching Sociology of Education courses for many years and is now an affiliate member of the graduate faculty in the Educational Foundations Department at the University of Hawai'i at Mānoa. His current research involves minority pupils in U.S. schools.

Melvin E. Clark is a retired Air Force meteorological officer and has taught for Pennsylvania State University in the Educational Theory and Policy program. His current research interest is secondary students' attitudes, behaviors, and grades.

Roger C. Shouse is an assistant professor of Education Policy Studies at the Pennsylvania State University College of Education. A former secondary school teacher, his research focuses on how school social and organizational characteristics influence student achievement and school effectiveness.

Shan-nan Chang is a professor at the Graduate Institute of Education at National Taitung Teachers College. His current research interests are education policy and sociology of education.

*Pacific Educational Research Journal*
*Vol. 10, No. 1, pp. 43–56*

# How Well Are Schools Addressing the Health-Related Education Needs of Hawai'i Youth? Results From the Youth Risk Behavior Survey and the School Health Education Profile Survey

**Beth Pateman, Susan M. Saka,** and **Morris K. Lai**
*University of Hawai'i at Mānoa*

This paper compares data from the 1997 Hawai'i High School, Hawai'i Middle School, and United States Youth Risk Behavior Surveys (YRBS) and the 1998 Hawai'i School Health Education Profile Survey (SHEP). YRBS results reveal many positive findings about the status of health risk behaviors among Hawai'i youth but identify specific areas of concern, such as suicide ideation, unsafe school campuses, early use of marijuana, and unprotected sexual intercourse. SHEP results indicate that Hawai'i secondary schools are attempting to address health risk behaviors in health education classes. However, assignment of unqualified teachers to teach health education and lack of opportunity for preservice and in-service professional preparation in health education are major concerns in Hawai'i. With the 1999 release of the Hawai'i Health Content Standards, issues of professional preparation and teacher assignment must be addressed in the state.

Today's youth face many health, educational, and social challenges not experienced by previous generations of young people. Increased levels of violence, alcohol and other drug use, HIV infection, unintended pregnancy, school dropout, low literacy, and disrupted family and home situations pose serious challenges to our health and education systems (Satcher, 1995). To meet these important challenges, educators must respond caringly and competently to both the health and education needs that young people bring to school. Young people who suffer from physical illnesses or injury, mental health problems, hunger, pregnancy, alcohol and drug use, or fear of violence are less likely to learn, regardless of efforts to improve educational methods, standards, or organizations (Kolbe, Collins, & Cortese, 1997). Because most young people attend school, school-based programs can be an important means of addressing health and education needs.

The Curriculum Research & Development Group (CRDG), University of Hawai'i at Mānoa, conducts two ongoing statewide surveys for the Hawai'i State Department of Education (DOE) to assess the status of (a) health risk behaviors among middle and high school students in Hawai'i and (b) school-based programs designed to address health risk behaviors. The Hawai'i Youth Risk Behavior Survey (YRBS), conducted in odd-numbered years since 1991, is used to monitor six categories of priority health risk behaviors among middle and high school students. The School Health Education Profile Survey (SHEP), conducted in even-numbered years since 1994, is used to assess school-based programs designed to address those health risk behaviors. The purpose of this paper is to compare results from the most recent surveys for which data are available, the 1997 Hawai'i and United States YRBS and the 1998 Hawai'i SHEP. In this paper we examine the degree to which Hawai'i middle and high school students put themselves at risk for serious health problems, compare Hawai'i youth risk behaviors with those among youth across the United States, and determine the extent to which Hawai'i school-based programs address youth health risk behaviors.

## Method

### Youth Risk Behavior Survey

The YRBS is used to monitor six categories of priority health risk behaviors among middle and high school youth: (a) behaviors that contribute to unintentional and intentional injuries, (b) alcohol and other drug use, (c) sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases (STDs), including human immunodeficiency virus (HIV) infection, (d) tobacco use, (e) unhealthy dietary behaviors, and (f) physical inactivity. These six categories of risk behaviors contribute to the leading causes of morbidity, mortality, and social problems among youth and adults in the United States (Kann et al., 1998).

The Centers for Disease Control and Prevention (CDC) biennially conducts the YRBS among a nationally representative sample of high school students. In addition, CDC provides fiscal and technical assistance to interested state and local education agencies (SEAs/LEAs) to conduct local surveys. The Hawai'i DOE has conducted the High School YRBS among a representative sample of 9th–12th grade students in odd-numbered years since 1991. The Hawai'i Middle School YRBS was conducted among a representative sample of middle school students (6th–8th grades) for the first time in 1997.

The 84-item, multiple-choice High School YRBS was administered to 1,409 students in 23 public and 6 private high schools in Hawai'i during the spring of 1997. The 87-item, multiple-choice Middle School YRBS was administered to 1,450 public middle school students from 23 schools during the spring of 1997. Survey administration, conducted in selected classrooms by trained data collectors, was designed to protect the privacy and confidentiality of all participants. Student participation was voluntary, with written parental permission required. Sampling and survey administration procedures have been reported previously (Saka & Lai, 1998a, 1998b).

### School Health Education Profile Survey

The School Health Education Profile Survey is used to monitor characteristics of health education in middle or junior high schools and senior high schools (Grunbaum et al., 1998). Two SHEP questionnaires were developed by CDC in collaboration with representatives of 75 state, local, and territorial education agencies. CDC provides fiscal and technical assistance for interested SEAs/LEAs to conduct local surveys. The Hawai'i DOE has conducted the SHEP Survey since 1994.

The most recent Hawai'i SHEP was conducted during spring of 1998 to ascertain administrative and instructional perspectives on health education in middle, junior/senior high, and senior high public schools in Hawai'i. The survey included two questionnaires, one for principals and one for lead health education teachers in each school, as designated by principals. The two questionnaires were mailed to all 84 regular secondary public schools containing any of Grades 6 through 12. Sampling and administration procedures have been reported previously (Pateman, Saka, & Lai, 1998).

## Results

### Youth Risk Behavior Survey

The Hawai'i Middle School and High School YRBS data clearly indicate that Hawai'i youth put themselves at risk for serious health problems. Data from both surveys were weighted statistically to reflect the likelihood of sampling each student and to reduce bias by compensating for differing patterns of nonresponse (Saka & Lai, 1998a, 1998b). The data can be used to

make inferences concerning the priority health risk behaviors of all Hawai'i public school students in Grades 6–8 and Grades 9–12. Weighting procedures have been reported previously (Saka & Lai, 1998a, 1998b).

Comparisons with national and other state data reveal that the frequencies of most youth health risk behaviors in Hawai'i are lower than those among youth across the United States. Results provided in Table 1 include the frequencies for students in Hawai'i middle schools, Hawai'i high schools, and U.S. high schools, as well as the relative rank of Hawai'i high school frequencies compared to other states'.

Hawai'i middle and high school students were more likely to wear seatbelts and less likely to drive after drinking than were high school students across the U.S. However, Hawai'i high school students were just as likely to ride with a drinking driver as high school students across the U.S. Hawai'i high school students were also less likely to wear motorcycle or bicycle helmets than high school students across the U.S., likely reflecting laws in different parts of the country.

Hawai'i high school students ranked first among other weighted states in being least likely to carry weapons, and third in being least likely to carry weapons on school property. However, Hawai'i middle school students were more likely to carry weapons than Hawai'i and U.S. high school students, and as likely to carry weapons on school property as U.S. high school students. Hawai'i middle and high school students more often reported feeling too unsafe to go to school than U.S. high school students. Hawai'i middle school students were more likely to report having their property stolen or deliberately damaged at school or to have been in physical fights on or off school property than were Hawai'i and U.S. high school students. Hawai'i middle school and high school students reported more frequent health risk behaviors related to suicide than did U.S. high school students. The recall period for behaviors related to suicide was 12 months for high school students and lifetime for middle school students.

Overall, the frequency of health risk behaviors related to tobacco use was lower or similar among Hawai'i middle and high school students when compared with U.S. high school students. However, Hawai'i middle school students were more likely to begin smoking before age 13. Hawai'i middle and high school students were far less likely to use smokeless tobacco than their counterparts in other states (ranked second in being less likely).

The frequency of alcohol and other drug use health risk behaviors reported among Hawai'i high school students was lower than or similar to that of U.S. high school students. Hawai'i high school students ranked among the top five weighted states in being least likely to have ever used alcohol, illegal steroids, inhalants, and illegal injected drugs, or to have used alcohol in the past 30 days. However, Hawai'i high school students ranked in the bottom list of states in which students were more likely to report drinking

TABLE 1
*1997 Youth Risk Behavior Survey: Hawai'i Middle Schools[a], Hawai'i High Schools[b], U.S. High Schools[c], and Hawai'i High School State Rank[d]*

| Injury and violence | Hawai'i middle schools % | Hawai'i high schools % | U.S. high schools % | Hawai'i high school state rank |
|---|---|---|---|---|
| 1. Never or rarely wore a seatbelt riding with others | 13.0 | 14.6 | 19.3 | 5/27 |
| 2. Motorcycle riders who never or rarely wore helmet | NA[e] | 68.1 | 36.2 | 23/24 |
| 3. Bicycle riders who never or rarely wore helmet | 65.5 | 93.9 | 88.4 | 19/27 |
| 4. Rollerbladers who never or rarely wore helmet | 54.7 | NA | NA | NA |
| 5. Skateboarders who never or rarely wore helmet | 25.2 | NA | NA | NA |
| 6. Rode with a drinking driver in past 30 days | 26.7 | 36.1 | 36.6 | 13/27 |
| 7. Drove when drinking in past 30 days | NA | 10.3 | 16.9 | 6/27 |
| 8. Carried a weapon, such as a gun, knife, or club in past 30 days | 20.5 Besides gun | 14.1 | 18.3 | 1/26 |
| 9. Carried a gun during past 30 days | 7.5 | 4.1 | 5.9 | 1/26 |
| 10. Carried a weapon on school property in past 30 days | 7.8 | 6.1 | 8.5 | 3/27 |
| 11. Felt too unsafe to go to school in past 30 days | 6.0 | 5.6 | 4.0 | 17/27 |
| 12. Threatened or injured with a weapon on school property in past 12 months | NA | 6.3 | 7.4 | 3/27 |
| 13. Property stolen or deliberately damaged on school property in past 12 months | 51.2 | 33.5 | 32.9 | 18/26 |
| 14. Were in physical fight in past 12 months | 42.5 | 31.7 | 36.6 | 4/27 |
| 15. Were injured in a physical fight and treated by doctor/nurse during past 12 months | 2.8 | 3.1 | 3.5 | 6/27 |
| 16. Were in physical fight on school property in past 12 months | 23.0 | 12.9 | 14.8 | 6/27 |
| 17. Seriously considered attempting suicide in past 12 months | 28.8 In lifetime | 26.9 | 20.5 | 25/27 |

[a]Hawai'i Middle Schools, Grades 6–8, $n$ = 1,450. [b]Hawai'i High Schools, Grades 9–12, $n$ = 1,409. [c]United States High Schools, Grades 9–12, $n$ = 16,262. [d]Hawai'i rank among states having weighted YRBS data. [e]NA = not available.

TABLE 1 (continued)
*1997 Youth Risk Behavior Survey: Hawai'i Middle Schools, Hawai'i High Schools, U.S. High Schools, and Hawai'i High School State Rank*

| Injury and violence (continued) | Hawai'i middle schools % | Hawai'i high schools % | U.S. high schools % | Hawai'i high school state rank |
|---|---|---|---|---|
| 18. Made a suicide plan in past 12 months | 16.7 In lifetime | 20.1 | 15.7 | 22/26 |
| 19. Attempted suicide in past 12 months | 12.3 In lifetime | 11.5 | 7.7 | 24/26 |
| 20. Suicide attempt required medical attention in past 12 months | 4.4 In lifetime | 4.0 | 2.6 | 24/27 |
| **Tobacco use** | | | | |
| 21. Ever tried cigarette smoking in lifetime | 49.9 | 67.4 | 70.2 | 4/25 |
| 22. First smoked a cigarette before age 13 | 35.4 | 25.6 | 24.8 | 13/27 |
| 23. Smoked cigarettes in past 30 days | 20.1 | 29.2 | 36.4 | 3/27 |
| 24. Current cigarette smokers who purchased cigarettes at a store or gas station in past 30 days | 1.5 In a store | 24.9 | 29.8 | 16/25 |
| 25. Current cigarette smokers who were not asked to show proof of age when purchasing cigarettes in a store in past 30 days | 3.7 | 65.0 | 66.7 | 14/22 |
| 26. Smoked cigarettes on school property in past 30 days | 7.1 | 16.0 | 14.6 | 11/27 |
| 27. Used chewing tobacco or snuff in past 30 days | 4.0 | 3.4 | 9.3 | 2/27 |
| 28. Used chewing tobacco or snuff on school property in past 30 days | NA | 1.9 | 5.1 | 2/26 |
| **Alcohol and other drug use** | | | | |
| 29. Had first drink of alcohol before age 13 | 44.2 | 31.7 | 31.1 | 13/27 |
| 30. Ever drank alcohol in lifetime | 50.1 | 72.5 | 79.1 | 4/24 |
| 31. Drank alcohol in past 30 days | 23.7 | 40.3 | 50.8 | 4/27 |
| 32. Had five or more drinks in a row in past 30 days | 8.7 | 25.1 | 33.4 | 7/27 |
| 33. Drank alcohol on school property in past 30 days | 2.9 | 8.5 | 5.6 | 26/27 |
| 34. First tried marijuana before age 13 | 14.8 | 14.4 | 9.7 | 26/27 |
| 35. Ever used marijuana in lifetime | 19.8 | 46.4 | 47.1 | 19/26 |
| 36. Used marijuana in past 30 days | 12.1 | 24.3 | 26.2 | 11/27 |
| 37. Used marijuana on school property in past 30 days | 3.3 | 12.6 | 7.0 | 27/27 |

TABLE 1 (continued)
*1997 Youth Risk Behavior Survey: Hawai'i Middle Schools, Hawai'i High Schools, U.S. High Schools, and Hawai'i High School State Rank*

| | Alcohol and other drug use (continued) | Hawai'i middle schools % | Hawai'i high schools % | U.S. high schools % | Hawai'i high school state rank |
|---|---|---|---|---|---|
| 38. | First tried any form of cocaine before age 13 | 2.2 | 1.2 | 1.1 | 9/26 |
| 39. | Ever used any form of cocaine in lifetime | 3.6 | 7.4 | 8.2 | 16/27 |
| 40. | Used any form of cocaine in past 30 days | 1.9 | 2.8 | 3.3 | 8/27 |
| 41. | Ever sniffed or inhaled intoxicating substances in lifetime | 10.7 | 15.7 | 16.0 | 2/27 |
| 42. | Ever used steroids without prescription in lifetime | 1.8 | 2.1 | 3.1 | 2/27 |
| 43. | Ever used other illegal drugs in lifetime | NA | 14.5 | 17.0 | 9/24 |
| 44. | Ever injected illegal drugs in lifetime | 1.3 | 0.8 | 2.1 | 2/27 |
| 45. | Were offered, sold, or given illegal drugs on school property in past 12 months | 20.0 | 41.4 | 31.7 | 25/26 |
| | Sexual behaviors | | | | |
| 46. | Ever had sexual intercourse in lifetime | 13.6 | 40.3 | 48.4 | 2/23 |
| 47. | First had sexual intercourse before age 13 | 8.3 | 7.0 | 7.2 | 10/24 |
| 48. | Had four or more sexual partners in lifetime | 3.3 | 9.1 | 16.0 | 1/24 |
| 49. | Had sexual intercourse in past 3 months | NA | 25.8 | 34.8 | 2/24 |
| 50. | Of students who had sexual intercourse in past 3 months, drank alcohol or used drugs before last sexual intercourse | NA | 22.7 | 24.7 | 3/23 |
| 51. | Of students who had sexual intercourse in past 3 months, used birth control pills at last sexual intercourse | NA | 19.3 | 16.6 | 12/23 |
| 52. | Of students who had sexual intercourse in past 3 months, used condom at last sexual intercourse | NA | 41.0 | 56.8 | 22/23 |
| 53. | Had been pregnant or gotten someone pregnant | NA | 5.7 | 6.5 | 13/24 |
| 54. | Ever taught about AIDS or HIV in school | 84.1 | 94.3 | 91.5 | 3/27 |
| 55. | Ever talked about AIDS or HIV with parents or other adults in family | 50.4 | 51.8 | 62.8 | 25/27 |

TABLE 1 (continued)
*1997 Youth Risk Behavior Survey: Hawai'i Middle Schools, Hawai'i High Schools, U.S. High Schools, and Hawai'i High School State Rank*

| Dietary behaviors | Hawai'i middle schools % | Hawai'i high schools % | U.S. high schools % | Hawai'i high school state rank |
|---|---|---|---|---|
| 56. Described selves as overweight | 31.1 | 33.5 | 27.3 | 27/27 |
| 57. Were trying to lose weight | 44.5 | 45.1 | 39.7 | 22/27[f] |
| 58. Dieted to lose weight or keep from gaining weight in past 30 days | 34.1 | 33.4 | 30.4 | 23/27[f] |
| 59. Exercised to lose weight or keep from gaining weight in past 30 days | 56.5 | 59.0 | 51.5 | 2/27[f] |
| 60. Vomited or took laxatives to lose weight or keep from gaining weight in past 30 days | 5.9 | 4.4 | 4.5 | 3/27 |
| 61. Took diet pills to lose weight or keep from gaining weight in past 30 days | 3.0 | 3.8 | 4.9 | 2/27[f] |
| 62. Ate 5 or more servings of fruits and vegetables yesterday | NA | 32.8 | 29.3 | 5/25 |
| 63. Ate no more than 2 servings of foods typically high in fat yesterday | NA | 64.5 | 62.3 | 9/25 |
| **Physical activity** | | | | |
| 64. Exercised vigorously at least 20 minutes on 3 or more of past 7 days | 74.0 | 60.8 | 63.8 | 15/27 |
| 65. Did stretching exercises on 3 or more of past 7 days | NA | 50.0 | 51.3 | 11/24 |
| 66. Did strengthening exercises on 3 or more of past 7 days | NA | 47.8 | 51.4 | 11/25 |
| 67. Enrolled in physical education (PE) classes | 64.9 | 40.4 | 48.8 | 20/27 |
| 68. Attended daily PE classes | 26.2 | 11.6 | 27.4 | 25/27 |
| 69. Exercised 20 minutes or more in average PE class | 58.0 | 79.7 | 73.9 | 3/26 |
| 70. Played on sports teams run by school in past 12 months | 49.6 Currently on any sports team | 40.6 | 49.5 | 21/26 |
| 71. Played on sports teams run by organizations outside school in past 12 months | 49.6 Currently on any sports team | 39.6 | 38.3 | 8/26 |

[f]Lower rankings are better except for items 57, 58, 59, and 61 (for these items, it is not clear which direction is better).

alcohol or using marijuana on school property, trying marijuana before age 13, or being offered, sold, or given an illegal drug on school property.

Hawai'i middle and high school students generally reported less frequent sexual health risk behaviors than students across the U.S. Hawai'i high school students ranked in the top three weighted states least likely to report ever having sexual intercourse, having sexual intercourse in the past three months, having four or more sexual partners, and having used alcohol or drugs before last intercourse. However, Hawai'i middle school and high school students were as likely as high school students across the U.S. to have had first intercourse before age 13. Among sexually active high school students, Hawai'i students were as likely as U.S. students to have used birth control pills before last intercourse, but they were less likely to have used a condom at last intercourse. Hawai'i high school students were more likely than students across the U.S. to have been taught about HIV/AIDS in school, but they were less likely to have talked about HIV/AIDS with their parents or other adult family members.

Hawai'i middle and high school students were more likely than U.S. high school students to consider themselves overweight, to be trying to lose weight, to have dieted to lose weight, and to have exercised to lose weight. Hawai'i high school students were as likely as U.S. high school students to report using laxatives or vomiting to lose weight during the past 30 days, but they were less likely to report using diet pills to lose weight. When compared with U.S. high school students, Hawai'i high school students were more likely to have consumed five or more servings of fruits and vegetables on the day preceding the survey, but they were similar in their consumption of food typically high in fats.

Hawai'i high school students were similar or slightly less likely than U.S. high school students to have performed vigorous, stretching, or strengthening exercises in the week before the survey. However, Hawai'i high school students were far less likely to have been enrolled in physical education classes or to have attended daily physical education classes than their counterparts across the United States. Hawai'i high school students were less likely to play on school sports teams but similar in their likelihood to play on sports teams outside their schools, when compared with U.S. high school students.

**School Health Education Profile Survey**

Among the 84 regular secondary public schools containing any of Grades 6 through 12 in Hawai'i, usable questionnaires were received from 57 principals and 60 lead health education teachers from 60 schools. Results from the principal questionnaire summarize the health education attributes of the participating schools. Results from the lead health education teacher questionnaire are weighted statistically and can be used to make inferences concerning the health education attributes of all lead health education

TABLE 2
*1998 Hawai'i School Health Education Profile Survey*

| | Principal results[a] | % |
|---|---|---|
| 1. | Health education is required in school | 100 |
| 2. | One health education course is required | 71 |
| 3. | Health education course required in 7th grade | 82 |
| 4. | Health education course required in 10th grade | 96 |
| 5. | Health education taught as a course divided between two subjects | 73 |
| 6. | Health education units or lessons integrated into other subjects | 68 |
| 7. | Health education taught through nonclassroom programs or activities | 68 |
| 8. | Health education teacher coordinated health education in school | 74 |
| 9. | Substitute teachers provided during health inservice training for teachers in school | 57 |
| 10. | Health education training offered within school or district | 55 |
| 11. | Trained peer educators helped teach about health education | 42 |
| 12. | School had school health advisory committee | 26 |
| 13. | HIV/AIDS education required in 7th grade | 85 |
| 14. | HIV/AIDS education required in 10th grade | 93 |
| 15. | HIV/AIDS education required mainly in health courses | 98 |
| 16. | School had written HIV/AIDS policy protecting rights of students and/or staff with HIV infection/AIDS | 82 |
| | **Lead health education teacher results[b]** | |
| 17. | State curriculum or guidelines used to teach health education | 91 |
| 18. | Tried to increase student knowledge in injury prevention and safety | 88 |
| 19. | Tried to increase student knowledge in suicide prevention | 75 |
| 20. | Tried to increase student knowledge in sexual harassment | 81 |
| 21. | Tried to increase student knowledge in conflict resolution or violence prevention | 90 |
| 22. | Tried to increase student knowledge in tobacco prevention | 100 |
| 23. | Tried to increase student knowledge in alcohol and other drug prevention | 100 |
| 24. | Tried to increase student knowledge in human sexuality | 100 |
| 25. | Tried to increase student knowledge in HIV prevention | 100 |
| 26. | Tried to increase student knowledge in growth and development | 97 |
| 27. | Tried to increase student knowledge in STD prevention | 100 |
| 28. | Tried to increase student knowledge in reproductive health | 91 |
| 29. | Tried to increase student knowledge in pregnancy prevention | 93 |
| 30. | Tried to increase student knowledge in dietary behaviors and nutrition | 98 |
| 31. | Tried to increase student knowledge in physical activity and fitness | 93 |
| 32. | Tried to improve student skills in accessing valid health information | 80 |
| 33. | Tried to improve student skills in advocating for personal, family, and community health | 66 |
| 34. | Tried to improve student skills in analysis of media messages | 80 |
| 35. | Tried to improve student skills in communication | 95 |
| 36. | Tried to improve student skills in decision making | 100 |
| 37. | Tried to improve student skills in goal setting | 97 |
| 38. | Tried to improve student skills in non-violent conflict resolution | 90 |
| 39. | Tried to improve student skills in resisting social pressures for unhealthy behaviors | 98 |
| 40. | Tried to improve student skills in stress management | 89 |
| 41. | Sent letters or newsletters to parents on health education | 47 |
| 42. | Invited parents to attend health education classes | 45 |
| 43. | Indicated large class size made teaching difficult | 29 |
| 44. | Coordinated health-related projects with other subject area teachers | 60 |
| 45. | Coordinated health-related projects with medical or public health professionals | 71 |
| 46. | Sent HIV/AIDS educational materials to parents | 23 |
| 47. | Primary position in school was health education teacher | 50 |
| 48. | Currently certified or endorsed by DOE to teach health | 75 |
| 49. | Major emphasis of professional preparation was health | 5 |
| 50. | Had not received four or more hours of inservice training on health education topics in last two years | 66 |

[a]School principal unweighted results, $n = 57$. [b]Lead health education teacher weighted results, $n = 60$.

teachers in regular secondary public schools in Hawai'i. Results of the survey (see Table 2) also can be used in conjunction with YRBS results to examine the extent to which secondary schools are addressing the major health risk behaviors of Hawai'i youth.

Principal survey results revealed that health education was required in all Hawai'i secondary schools and was taught most often in 7th grade and 10th grade. However, in 73% of schools, health education was taught as a course shared with another subject, rather than being an intact course. In most schools, health education also was taught as lessons or units integrated into other subjects and through nonclassroom activities. Substitute teachers were provided when lead health education teachers attended in-service meetings in just over half of the schools.

Lead health education teacher survey results indicated that 9 out of 10 teachers used state guidelines for teaching health education. Most lead health education teachers tried to increase student knowledge about the priority health risk behaviors identified in the Youth Risk Behavior Survey in their health education classes. Most lead health education teachers also reported trying to increase student skills in areas such as communication, decision making, and goal setting. Health education was the primary responsibility of half of lead health education teachers, and three-quarters reported holding state certification. However, only 5% of lead health education teachers reported health education as their primary field of professional preparation, and two-thirds reported they had not received 4 or more hours of in-service training on health education topics in the past 2 years.

## Discussion

Results from the Hawai'i Middle and High School YRBS and the SHEP Survey reveal many positive findings about the status of youth health risk behaviors in Hawai'i and school-based programs designed to address health risk behaviors. Generally, frequencies of health risk behaviors among Hawai'i youth are lower than among U.S. high school students. In addition, all secondary principals reported that health education is required in their schools, mainly in Grades 7–10, and lead health education teachers reported trying to increase student knowledge and skills in important areas.

These results notwithstanding, several areas of concern should be addressed. Hawai'i high school students ranked in the bottom half of weighted states in motorcycle and bicycle helmet use and were as likely as U.S. high school students to have ridden with drinking drivers during the past 30 days. Given that unintentional injury is the leading cause of death among adolescents, these health risk behaviors are of grave concern. Hawai'i high school students also ranked near the bottom of weighted states in suicide ideation, planning, attempts, and injury.

Hawai'i high school students ranked in the bottom half of weighted states in students' reporting that they felt too unsafe to go to school or that they had their property stolen or deliberately damaged at school. Similarly, Hawai'i high school students ranked near the bottom of weighted states in students' reporting that they consumed alcohol on school property and that they were offered, sold, or given illegal drugs on school property. A safe school learning environment means addressing health risk behaviors such as these. Hawai'i high school students also ranked near the bottom of weighted states in students' reporting having tried marijuana before age 13 and had the highest rate of having used marijuana on school property in the past month.

In the health risk area of sexual behavior, Hawai'i high school students ranked almost last among sexually active students who used a condom at last intercourse. Similarly, Hawai'i high school students ranked almost last in having talked about AIDS or HIV with parents or other adult family members. These health risk behaviors may reflect cultural issues of reticence in discussing sexual issues and can be addressed from an education perspective.

Hawai'i high school students were far more likely than their counterparts across the U.S. to consider themselves overweight and to be attempting to lose weight through various means. Hawai'i high school students also were less likely to be enrolled in physical education classes.

These health risk behaviors provide an important road map for health related education in Hawai'i secondary schools. An initial review of the SHEP results indicates that schools and teachers are addressing important health risk behaviors in school-based health education classes. However, respondents to the SHEP were the designated lead health education teachers in their schools, reflecting the best in health education in the state. Other teachers assigned to teach health education may not be working at the same level.

A closer examination of the SHEP data raises important concerns regarding teacher assignment and professional preparation. Only half of lead health education teachers indicated that teaching health education was their primary school assignment. Anecdotally, Hawai'i secondary teachers often report that the health education line in their schools is divided among faculty, especially new faculty, from many content areas to fill out their schedules. Thus, education about important health risk behaviors may be taught by teachers with little or no professional preparation in health education or who do not want to teach health education.

Alarmingly, only 5% of lead health education teachers reported that health education was the major emphasis of their professional preparation. In addition, two thirds of lead health education teachers reported that they had not received 4 or more hours of in-service training on health education topics in the last 2 years.

The University of Hawai'i (UH) at Mānoa, the major teacher preparation institution in the state, currently does not offer a baccalaureate degree in health education. Recently, a course in contemporary school health education has been made a requirement for all preservice elementary teachers, and new graduate-level courses in teaching with the new Hawai'i Health Education Standards, HIV prevention education, and school violence prevention have been added to the UH program of study. However, an undergraduate major in health education remains unavailable at this time.

The Hawai'i State Department of Education released new Health Content Standards in August, 1999. These standards have become part of the revised Hawai'i Content and Performance Standards (HCPS II), and meeting them will be required of all students in Hawai'i public schools. Teachers at the kindergarten through 12th-grade levels are called on to ensure that their students learn to do the following: comprehend concepts related to health promotion and disease prevention; access valid health information, products, and services; practice health-enhancing behaviors and reduce health risks; analyze the influences of media, culture, technology, and other factors to enhance health; use interpersonal communication skills to enhance health; use goal-setting and decision-making skills to enhance health; and advocate for personal, family, and community health. In the future, a high level of professional preparation, both at the preservice and in-service levels, will be required from teacher preparation institutions and from the DOE to ensure that teachers are prepared to meet these challenges. The Institute of Medicine (1997) recommends that school-based health instruction follow health education standards, emphasize the six priority health risk behaviors identified by CDC, and be provided by qualified health education teachers interested in teaching the subject. This is the level of professional preparation to which Hawai'i must aspire.

## References

Grunbaum, J. A., Kann, L., Williams, B. I., Kinchen, S. A., Collins, J. L., & Kolbe, L. J. (1998). CDC surveillance summaries: Characteristics of health education among secondary schools—school health education profiles, 1996. *MMWR, 47* (SS-47), 1–31.

Hawai'i State Department of Education. (1999). *Health content standards: Moving from the blue book to HCPS II.* Honolulu: Author.

Institute of Medicine. (1997). *Schools and health: Our nation's investment.* Washington, DC: National Academy Press.

Kann, L., Kinchen, S. A., Williams, B. I., Ross, J. G., Lowry, R., Hill, C. V., Grunbaum, J. A., Blumson, P. S., Colins, J. L., & Kolbe, L. J. (1998). CDC surveillance summaries: Youth risk behavior surveillance—United States, 1997. *MMWR, 47*(SS-3), 1–89.

Kolbe, L. J., Collins, J., & Cortese, P. (1997). Building the capacity of schools to improve the health of the nation. *American Psychologist, 52*(3), 256–265.

Pateman, B., Saka, S. M., & Lai, M. K. (1998). *1998 Hawai'i School Health Education Profile Survey report.* Honolulu: Hawai'i Department of Education.

Saka, S. M., & Lai, M. K. (1998a). *1997 Hawai'i Youth Risk Behavior Survey report.* Honolulu: Hawai'i Department of Education.

Saka, S. M., & Lai, M. K. (1998b). *Comparisons of youth-risk behaviors of 1997 middle-school and 1997 high-school students in Hawai'i.* Honolulu: Hawai'i Department of Education.

Satcher, D. (1995). The school health policies and programs study: A summary report—Foreward. *Journal of School Health, 65*, 289.

## Authors

Beth Pateman is an associate professor in the Department of Teacher Education and Curriculum Studies, College of Education, University of Hawai'i at Mānoa. Her research interests include the monitoring of health risk behaviors among youth over time and the implementation and evaluation of school-based programs to impact those risk behaviors.

Susan M. Saka is an educational associate with the Evaluation Office of the Curriculum Research & Development Group, University of Hawai'i at Mānoa. Her recent research interests have focused on risky behaviors of middle school and high school students in Hawai'i.

Morris K. Lai directs the Evaluation Office of the Curriculum Research & Development Group, University of Hawai'i at Mānoa. He currently serves as principal investigator of the Hawai'i Informed Prevention System (development of databases to enhance evaluation of programs addressing use of drugs and violence by youth in Hawai'i), funded by the U.S. Department of Education.

*Pacific Educational Research Journal*
*Vol. 10, No. 1, pp. 57–72*

# A Longitudinal Study of the Patterns of Language Use in American Samoa: 1973–1998

**Anne R. Freese** and **Peggy A. Haleck**
*University of Hawai'i at Mānoa*

This paper reports the results of a longitudinal study conducted in American Samoa that examined the impact of the educational language policy on language use and traditional behaviors of young people in American Samoa over a period of 25 years. The paper compares the results of a study conducted in American Samoa in 1973 with data collected in 1987 and again in 1997, using the same instrument to measure changes in language use and culturally related behaviors (Baldauf, 1975; Freese, 1988). Results showed marked differences in the interpersonal and situational language use of American Samoan youth over the past 25 years. There was an ongoing shift towards increased English usage and decreased Samoan usage. Evidence from the data collected supports the hypothesis that the youth of American Samoa are involved in a shift in language use.

Research (Baldauf, 1982; Huebner, 1986) has reported that there is evidence suggesting that American Samoa may be experiencing a gradual shift in language patterns resulting in an increase in the use of English and a decrease in the use of the Samoan language. Baldauf (1982) reported a "gradual displacement of one language by another in the lives of the community members" in American Samoa (p. 4).

In response to Baldauf's findings, Huebner (1986) recommended the need for lines of research in American Samoa that examine languages used in various social domains as well as attitudes toward these languages. He suggested that the shift in English usage from a mother tongue can be the result of a) opportunities for economic and material rewards associated with proficiency in that language; b) opportunities for use of the language in oral domains; and c) support of a powerful institution, the school. Huebner (1986) warned that if Samoan literacy skills are to be preserved for future generations, "the public schools will have to assume a role traditionally assumed" by the pastors' schools, that of teaching Samoan literacy (p. 408). In 1981, Thomas reported that although indigenous educational leaders have been assuming a very active role in determining curriculum and instructional methods, less attention is being devoted to Samoan language and culture.

In a language use study conducted by 'Aipolo and Holmes (1990), researchers examined the patterns of Tongan and English language use, attitudes towards both languages, and maintenance of the Tongan language in New Zealand. Results of the study indicated an increased proficiency in English, code switching between Tongan and English in the young people, and a lack of awareness of the dangers of language loss. The researchers reported signs of incipient language shift even in immigrant groups, which had a high level of Tongan language maintenance. The 'Aipolo and Holmes study examined language shift in an immigrant population, yet their findings are similar to the patterns of language shift found by Baldauf (1975) in American Samoa.

Although previous studies (Baldauf, 1975; 1982; Dorian, 1982; Huebner, 1986, 1989) have raised the issue of language shift from Samoan to English in American Samoan youth, there are no published studies which investigate the trends or patterns of language use in American Samoa over an extended period of time. The current study fills the gap by examining language use patterns of American Samoan youth over a period of 25 years. It compares the results of Baldauf's study conducted in 1973 in American Samoa with data collected in 1987 (Freese, 1988) and 1997 and explores how the Western educational system has influenced attitudes and language use.

**Language Policy Background**

Education has been a major social component and an instrument of change throughout the American Pacific Islands. Since the arrival of the first

missionary teachers in American Samoa in 1828, there have been various pressures for cultural and linguistic change. Therefore, it is helpful to examine the linguistic and educational factors which have contributed to English language use in American Samoa.

There are a number of milestone events that have had a major impact on language policy in American Samoa. One such event occurred in 1904 when the United States Navy established an educational system. The first government school was established for the purpose of teaching Samoans the English language. English was introduced by the Americans upon possession of the islands and used as the language of instruction. The American Samoa government schools stressed attitudes and values (i.e., individualism, competition, and evaluation) which were alien to Samoan culture. Between 1921 and 1951 the United States operated with two basic assumptions when applying educational policies to American Samoan schools. First, there was the belief that United States educational practices could be transplanted to American Samoa with very few disadvantages, a belief that reflected colonial educational thinking. There was also the assumption that English was to be the language of instruction (Reid, 1941). By 1943 there were 46 public schools, only 2 of which provided education beyond the fourth grade (Haleck, 1996). In addition to attending the government school, Samoan students attended *faife'au* schools each morning before school and then again in the afternoon (Schramm, Nelson, & Betham, 1981).

In the 1960s, the educational system of American Samoa experienced radical change as a result of the "bold experiment" (Schramm et al., 1981). Educational television was implemented in the public schools in order to upgrade English language skills. It has been noted that the decision to implement this "bold experiment" initiated changes that have had a dramatic impact on the use of English. By the mid 1960s, all subjects for Grades 1 through 8 were taught via educational television primarily by stateside teachers, and the language of instruction was English (Haleck, 1996). One of the most significant results of the educational television era was universal education.

In contrast to the emphasis on the Americanization of the school system of the 1960s, there was a move in the mid-1970s to a bilingual/bicultural goal. This shift was reflected in the following statement of the American Samoa Department of Education policy:

> Inherent in this commitment (respect for the uniqueness of each individual and his potential, and the commitment to the concept and practice of individualized instruction) is the obligation to preserve the cultural heritage and foster the economic well being of American Samoa, while at the same time, prepare each individual for a personally satisfying and socially useful life wherever he chooses to live (American Samoa Department of Education, 1974).

The above statement reflected the desire to develop bicultural individuals who would maintain and preserve the Samoan language and culture. Although English was the official language of the schools, the goal was for each student to become bilingual in Samoan and English and have respect for Samoan traditions and culture. Federal bilingual legislation impacted the educational system in American Samoa by providing Title VII funding for bilingual programs. Numerous bilingual projects and curriculum development efforts were implemented. Bilingual education funding started in the 1970s, and locally based textbooks written in Samoan were developed for Grades 1 through 6 (Haleck, 1996). This period was marked by the appointment of the first Samoan Director of Education.

The move towards bilingual education and the development of bilingual texts came to an abrupt halt in 1985, when the newly appointed Director of Education mandated that American Samoa use stateside curriculum in all subjects. This marked a dramatic shift from the bilingual/bicultural goal of the American Samoa Department of Education to English only. The present American Samoa Department of Education language policy of English-only represented a shift away from the bilingual programs implemented in American Samoa in the 1970s and 1980s. The practice of instructing students in Samoan in the early grades and gradually shifting to English in the upper grades was abandoned in 1986. Samoan curriculum materials developed through these bilingual programs were replaced by textbooks from the U.S. mainland. By 1986, the English-as-a-second-language curriculum was disbanded, and all students were placed in stateside basal reading textbooks (Haleck, 1996). Since English is viewed as a major tool needed to participate in the outside world and is believed to be the key to economic success, English proficiency has become a high priority in American Samoa. The current language policies reflect the importance being placed on English.

## Method

### Respondents

The respondents for this study were 183 students attending American Samoa Community College (ASCC). The college is the only postsecondary institution in American Samoa. This group of students was selected because the community college students represented a population that was similar to groups of students surveyed in the two earlier studies. Previous samples included 189 high school seniors in 1973 (Bauldauf, 1975) and 185 community college students in 1987 (Freese, 1988). The variables of age, background, and exposure to the educational setting were partially controlled in all three studies by using the selected student populations. Although not all high school students continue their education at ASCC, the student population of the college consists primarily of American Samoans who have attended American Samoan schools. Like Bauldauf's population,

these students had extensive exposure to the "main enculturative and acculturative forces present in American Samoa, the family, the community and the school" (Baldauf, 1975, p. 19).

Of the 183 respondents in the current study, 6 were excluded from the data analysis because they were considered nonSamoan. A student was classified as Samoan if he was born in American or Western Samoa or was of Samoan parentage and residing in American Samoa. Eighty-one percent of the respondents were born in American Samoa, 15% in Western Samoa, and the remainder (4%) were born in Hawai'i or on the United States mainland. Sixty-six percent of the respondents were female and 33% male. The mean age of the students was 20 years.

**Instrument**

The data for this study were collected using the same instrument as the one used in the Baldauf (1975) study. The instrument was developed by the American Samoa Department of Education's Testing Office (see Appendix for a copy of the instrument). The general design for the self-report instrument was adopted from Dolores Gold's Acculturation Scales (Gold as cited in Baldauf, 1975). Questions included in the survey were developed in collaboration with Samoans knowledgeable in Samoan language and culture, and the questions were presented in Samoan and English.

The first section of the questionnaire asked for demographic data about the informants: sex, age, birthplace. In the second section, respondents were asked to report on their interpersonal and situational language use. Data gathered included information about their preferred language use with friends, family, and community members. The third section asked respondents to indicate which language they used for particular speech and cognitive functions (teasing and joking, saying prayers, thinking). The fourth section asked respondents to indicate which language they used in particular settings such as the home, church, school, or in the village.

Behaviors indicating resistance to or adoption of overt acculturation were measured by examining language behaviors with immediate and extended family members, language behavior with community members, and usage in practical situations. Data that indicated code switching were derived from the responses showing the use of Samoan and English in the same situations. In this paper, code switching is defined as the use of two codes (languages) in one situation, regardless of whether this behavior is conscious or unconscious (Gibbons, 1987).

The authors administered the surveys in 1987 and 1997. Students were told that the statements were the same in both languages and that they should read the items in the language they were most comfortable using. Students were informed that it was not a test. Students were given as much time as necessary to complete the questionnaire.

Analysis of the data included calculating the percentages of the responses across each item. The percentages derived from the responses on the 1997 survey were compared with the percentages calculated in the two previous studies.

## Findings and Discussion

The 1997 results are discussed by comparing and contrasting the current data with the previous data collected in 1973 and 1987. The results provided some interesting comparisons and suggested intriguing differences in the interpersonal and situational language use of American Samoan youth over the past 25 years. The results showed marked differences in language preference over the 25-year period. Comparing the 1987 results with the 1997 results indicated an ongoing trend or shift towards increased English usage and a decrease in the amount of Samoan language spoken in various situational contexts.

### Interpersonal Language Use

Language preferences in interpersonal situations were distinguished between speech with elders and traditional leaders, speech with friends and peers, and speech in the school setting. Students were asked about their language preferences when speaking with older people and traditional leaders, including aunts and uncles, parents, and the pastor. There appeared to be a decrease in the use of the Samoan language in all of these situations involving elders and traditional leaders. As Table 1 indicates, Samoan language use with aunts and uncles decreased markedly over the period from 1973 to 1997. In 1997, only 25% of youth reported speaking Samoan

TABLE 1
*Interpersonal Language Use*

| Language used with | Percentage using | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Always/Mostly Samoan | | | Samoan/English | | | Always/Mostly English | | |
| | 1997 | 1987 | 1973 | 1997 | 1987 | 1973 | 1997 | 1987 | 1973 |
| Parents | 56 | 74 | 83 | 34 | 18 | 12 | 10 | 7 | 4 |
| Brother/Sister | 29 | 41 | 56 | 50 | 44 | 36 | 21 | 14 | 8 |
| Friend | 6 | 29 | 30 | 53 | 48 | 52 | 42 | 33 | 17 |
| Classmates | 7 | 9 | 13 | 59 | 54 | 60 | 34 | 37 | 27 |
| Teachers | 2 | 3 | 3 | 41 | 25 | 28 | 58 | 70 | 67 |
| Aunts/Uncles | 25 | 46 | 65 | 57 | 44 | 27 | 18 | 10 | 9 |
| Pastor | 57 | 76 | 75 | 30 | 16 | 16 | 13 | 6 | 6 |
| Storekeepers | 16 | 24 | 33 | 59 | 59 | 61 | 25 | 17 | 5 |

*Note.* Percentages may not add up to 100% due to rounding.

most of the time or almost all of the time as compared to 46% in 1987 and 65% in 1973. Samoan language use with parents showed a similar decrease with 56% of the 1997 youth speaking mostly Samoan to their parents as compared with 74% in 1987 and 83% in 1973. With the pastor, Samoan was the language of preference for 57% of the respondents in 1997 compared to 76% in 1987 and 75% in 1973. Although there is evidence that the use of the Samoan language decreased in interpersonal situations with the pastor and parents, in both cases Samoan was still used by more than half of the youth, considerably more than in the other interpersonal situations.

Interpersonal language use in a more informal situation was surveyed by looking at the use of language with the storekeeper, brothers and sisters, and best friends. Language use patterns with storekeepers indicated a decrease in Samoan from 33% in 1973 to 24% in 1987 to 16% in 1997. An interesting result regarding language usage with the storekeepers suggests that the respondents reported code switching when conversing with storekeepers. The use of Samoan and English with storekeepers remained about the same, 60% over the 25-year period. With brothers and sisters, 29% of students reported speaking mostly Samoan in 1997 compared to 41% in 1987 and 56% in 1973. This pattern of decrease in the use of Samoan was also shown in interpersonal situations involving best friends. Only 6% of students reported using Samoan with best friends in 1997 compared with 29% in 1987 and 30% in 1973.

Reported language use in the school setting reflects the educational policy of English as the official language of instruction. Only 2% of the students surveyed in 1997 reported speaking primarily Samoan to their teachers. This statistic held constant over the 25-year period. There was no substantial change over the past 25 years. In 1987 and 1973 only 3% of the students reported the same preference for speaking to their teachers in Samoan. Language spoken in the school also indicated a drop in Samoan language used with classmates in the school setting. In 1973 Samoan was used with classmates 13% of the time compared to 9% of the time in 1987 and 7% in 1997.

Perhaps just as significant as the trend of decreased Samoan language usage in various situations is the difference in the trend toward increased English usage by students in the 1987 and 1997 samples. Results show an increased use of English in the personal interactions with brothers and sisters, friends, and classmates. English use increased from 17% with friends in 1973 to 42% in 1997. With classmates, English use increased from 27% to 34%. An interesting finding is that English usage with teachers dropped from 67% in 1973 to 58% in 1997. This drop can be explained by the increase in the use of Samoan/English (41%) in 1997. Since 41% of the students reported speaking both Samoan and English to their teachers, this suggests that students are very comfortable code switching. Once again, the results

suggest that the choice of language is influenced by the person being spoken to, as well as the setting. School is considered a Western institution.

The responses that fall into the category "Samoan/English" indicate the areas where Samoan students are comfortable using Samoan and English interchangeably. Over 50% of the respondents reported switching between Samoan and English with the following addressees: classmates, storekeepers, aunts/uncles, friends, brothers/sisters. As might be expected, peers frequently code switch. It appears that in the casual interactions, Samoan and English were readily mixed in conversations. Although youths tend to code switch with peers, there was the expectation that code switching would not occur as frequently with elders. However, the results indicated that the subjects used a high percentage of Samoan/English with their aunts/uncles. This finding suggests that English is infiltrating into some areas where previously Samoan was considered more appropriate. The pattern of language shift among young people over the 25-year period suggests the language-use patterns will continue, unless more emphasis is placed on Samoan-language use in the schools.

**Situational Language Use**

Like the results in 1987, in 1997 there was evidence that language use appears to depend upon the situation as well as on the addressee. Samoan was used more often with parents and the pastor. The settings in which respondents reported most use of Samoan were in the home, village, and church. The settings could be characterized in terms of the differing degrees of Samoan control, which determine the appropriate choice of language. For example, in the village and at church Samoan is the appropriate language. Research shows that the religious domain appears to be the area where indigenous languages are maintained the longest (Benton, 1981; Dorian, 1982).

Respondents were asked about the languages they used in a variety of other situations relating to both school and leisure activities (see Table 2). Respondents were asked to report language use related to cognitive behaviors such as writing, doing homework, and thinking. In all situations, the respondents indicated a strong preference for English over Samoan: 48% preferred using English when thinking in 1997, compared to 29% in 1987 and 15% in 1973. Of those surveyed in 1997, 64% wrote in English most of the time or almost all of the time, compared to 47% who responded similarly in 1987 and 34% in 1973. Seventy-two percent of the students in 1997 reported doing their homework in English, compared to 62% in 1973. The results in the areas of homework and writing are not surprising, since English is the language of instruction in the schools and, therefore, homework and writing are linked with English. These tasks are basically nontraditional Samoan activities and are associated with the Western institution of school. However, thinking is considered an "inner and personal expressive speech function"



70

and therefore would be considered most resistant to language shift (Fishman, 1965, p. 427). The use of English in thinking increased from 15% to 48% during the 25-year period. Concurrently, the reported use of Samoan/English when thinking indicated a marked decrease in Samoan use. Results indicated that those respondents who reported thinking mostly or almost always in Samoan decreased by 29% (36% to 7%) between 1973 and 1997.

In contrast to the low percentage (less than 10% in 1997) of Samoan language use reported in the areas of listening to the radio, watching television, and teasing and joking, respondents reported using Samoan 33% of the time when praying. This finding is high compared to all of the other situations and may be explained by the fact that praying is a church-related situation and considered traditionally oriented. It should be noted, however, that the reported use of Samoan when praying (33%) represented a marked decrease from the earlier survey results, 55% and 57% in the previous samples. This decrease of the use of Samoan when praying indicates a trend towards decreased use of Samoan in a traditionally Samoan situation, thus suggesting an erosion of Samoan language use.

The results of the longitudinal data indicate that language use is largely dependent on the setting or situation. That is, the use of English or Samoan is dictated by the individual being spoken to, the situation itself, or both. According to recent results, Samoan language is used the majority of the time with parents (56%) and the pastor (57%). Family and church-related situations are traditionally oriented and are closely tied to the Samoan culture. The use of Samoan decreased to below 50% in the case of aunts and uncles and brothers and sisters. This result suggests that language use with family members other than parents has shifted to greater English usage. Samoan was spoken a small percentage of the time with classmates and teachers, suggesting that school is considered an English-oriented situation

TABLE 2
*Situational Language Use*

| Language used in | Percentage using | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Always/Mostly Samoan | | | Samoan/English | | | Always/Mostly English | | |
| | 1997 | 1987 | 1973 | 1997 | 1987 | 1973 | 1997 | 1987 | 1973 |
| Writing | 2 | 3 | 5 | 34 | 49 | 57 | 64 | 47 | 34 |
| Teasing/Joking | 9 | 29 | 40 | 65 | 53 | 51 | 26 | 18 | 7 |
| Praying | 33 | 55 | 57 | 42 | 28 | 29 | 25 | 15 | 11 |
| Homework | 2 | 0 | 8 | 25 | 24 | 29 | 72 | 74 | 62 |
| Watching TV | 6 | 5 | 7 | 35 | 27 | 35 | 59 | 67 | 56 |
| Listen to radio | 2 | 4 | 10 | 41 | 52 | 64 | 57 | 43 | 20 |
| Thinking | 7 | 21 | 36 | 45 | 49 | 51 | 48 | 29 | 15 |

*Note.* Percentages may not add up to 100% due to rounding.

influenced by Western models. The overall pattern indicates that Samoan is still preferred for traditional contexts while the use of English is increasing in less formal settings, particularly in the personal interactions with extended family members, friends, and classmates. English appears to be used alongside Samoan in the majority of situations.

## Conclusion

Evidence from the data collected over approximately a 25-year period supports Huebner's hypothesis (1986) that the youth of American Samoa are involved in a shift in language use. The pattern shown by the results suggests that English is infiltrating into areas where previously Samoan was considered more appropriate.

Over the years, American Samoan educational leaders have recognized the advantages of using English for communication and access to economic opportunities. However, given the findings of language use over the past 25 years, there is the possibility that an overemphasis on English may pose a threat to the Samoan language and culture. There is a need to examine the cultural and educational priorities in American Samoa to avoid the conflict between the actual practice of the system, stated policy, and the further erosion of the Samoan language.

Samoan cultural instruction has shown a decline in the curriculum along with the bilingual institutional policy. Thomas (1984) reported that the material culture and Western educational practices introduced by Westerners, in many cases, creates dissatisfaction with aspects of traditional ways of living and influences American Samoan youth to embrace elements of the Westerners' culture. "Schooling has opened their eyes to varied styles of life and whetted their appetites for vocations and social pursuits different from those of traditional village life" (Thomas, 1984, p. 229). In addition, the high level of mobility of Samoans between Hawai'i and California has influenced the demand for more English and Western skills. In the attempt to prepare the youth for further education in a Western context, the well educated leaders of American Samoa appear to be overlooking the importance of maintaining the Samoan language and cultural identity. Educators need to determine the balance between the need to prepare students for life in an increasingly Western, technological society and how to support the maintenance of Samoan language and culture. A first step, according to Thomas (1984), is to determine what mixture of Samoan objectives, skills, and content should be included in the schools.

The current survey results, indicating an increased use of English, support the contention that Western style education and the increased emphasis on English in the schools have influenced the language preference of American Samoan youth. However, it should be noted that the increased English language use could not be attributed entirely to Western education.

The spread of technology (educational television and videocassette recorders) has also had an impact on bringing about changes in language usage. The impact of television, films, and travel will continue to influence language use. However, the one factor that can be controlled is the language policy in the schools.

The results of this longitudinal study can suggest lines of research for the American Samoa Department of Education. What role will the Samoan language play in the lives of future generations if the trend of increased English use and decreased Samoan use continues? Huebner (1986) points out that

> any language education policy reflects the social, political and economic context of public education. Furthermore, the effect of a language education policy on society extends beyond the generation receiving direct services under it, for it influences what members of that generation bring with them to the task of educating their children. (p. 29)

Although the extensive data in this study provide valuable information about language use trends over an extended period of time, survey research of this nature has limitations. It cannot reveal the complexity of language use. One recommendation to policy makers is to conduct a qualitative study of language use to explore the complex identity and competing social and cultural demands that influence language use in daily interactions. The research could explore the attitudes and underlying beliefs that influence one's decision to use a particular language. Qualitative research, in conjunction with the survey research, could provide additional information as a basis for making language policy decisions.

The question of how to maintain the vernacular, while at the same time prepare the youth to function successfully outside of American Samoa, is a complex one. To ensure that the literacy skills do not continue to decline, it is essential that the schools and the larger community reevaluate the language policy and the Americanization of the curriculum, explore ways to reinstate a bilingual approach, and renew the effort of including bilingual materials in the schools.

It is important that American Samoans address the language issue and the extent to which school society and village society need to be complementary in the socialization process. This question may appear remote from the issue of English language development, yet it is inextricably intertwined with the issue of acculturation. It will take great social sensitivity and a strong sense of priorities on the part of policy makers to satisfy the educational expectations of the American Samoans, while at the same time maintain the language and culture. The future of the Samoan language depends on the relationship between the language goals and the response of the community and the teachers to these goals. It is hoped that results from this longitudinal study will provoke thought, raise issues, and provide

useful, concrete data for policy makers to form the foundation for curriculum reform and language policy reform.

## Author Note

We are grateful to Dr. Salu Hunkin, President of American Samoa Community College, for allowing us to administer the survey to the students and for her valuable input.

## Appendix

### SURVEY ON LANGUAGE USAGE

Please tell me a little about yourself by answering the questions below. If there are any questions you would rather not answer, feel free to leave them blank.

**You**

1. What is your sex? ☐ male ☐ female
   *Po o oe se tama* *tama* *teine*
   *po o se teine?*

2. How old are you? _____
   *E fia ou tausaga?* years */tausaga*

3. Where were you born? _____
   *O fea sa e fanau ai?* village */nu'u* country */atunu'u*

4. What is your racial or ethnic background?
   *O le a lou atunuu moni?*
   ☐ American Samoan
   ☐ Western Samoan
   ☐ Tongan
   ☐ Korean
   ☐ Filipino
   ☐ Caucasian
   ☐ Other (specify) _____
   ☐ Mixed (specify) _____

**Your Home**

5. Have you ever lived anywhere besides American Samoa?
   *Pe sa nofo i se isi atunuu e ese ai ma Amerika Samoa?* ☐ yes ☐ no
   *ioe* *leai*

   If yes, .... where? _____
   *Afai e ioe,* *o fea?*

6. What village are you living in now? _____
   *O fea le nu'u o lo'o e nofo ai nei?*

7. How long have you lived in that village?
   *O le a le umi talu ona e nofo i lea nu'u?*
   ☐ All my life
   *o lo'u olgag atoa*
   ☐ for ____ years
   *e _____ tausaga*

8. Which of the following do you have in your home?
   *O fea o nei mea o lo'o i totonu o lou fale?*
   ☐ television
   ☐ video player
   ☐ cable
   ☐ telephone
   ☐ computer
   ☐ internet

**Your School**

9. Have you gone to school anywhere besides in American Samoa?
   *Pe sa aoga i se isi nu'u e ese ai ma Amerika Samoa?* ☐ yes *ioe* ☐ no *leai*

   If yes, .... where? _____ What grades? _____
   *Afai e ioe, o fea?* *O le a le vasega?*

**Your Languages**

10. What languages do you speak?
    *Po'o o gagana e te iloa pe tautala ai?*
    ☐ Samoan
    ☐ English
    ☐ Tongan
    ☐ Korean
    ☐ Tagalog
    ☐ Other (specify) _____

11. What language do you consider your first language? _____
    *O fea o nei gagana o i luga o lau gagana muamua?*

12. Place a check mark to show what language you use when speaking to the following people.
*Siaki pusa uma e faailoa ai le gagana tou te tautatalai ai ma tagata ua tusia i lalo.*

| *language you speak with ....* | almost always Samoan | mostly Samoan | Samoan and English | mostly English | almost always English |
|---|---|---|---|---|---|
| Parents | | | | | |
| Brothers and Sisters | | | | | |
| Best friends | | | | | |
| Classmates | | | | | |
| Teachers | | | | | |
| Aunts and Uncles | | | | | |
| Pastor | | | | | |
| Storekeeper | | | | | |

13. What language do you use in the following situations?
*O le a le gagana e te fa'aogaina i tulaga nei?*

| *language you use when ....* | almost always Samoan | mostly Samoan | Samoan and English | mostly English | almost always English |
|---|---|---|---|---|---|
| Writing | | | | | |
| Teasing and joking | | | | | |
| Praying | | | | | |
| Doing homework | | | | | |
| Watching Television | | | | | |
| Listening to the radio | | | | | |
| Thinking | | | | | |

14. Samoan style clothes are clothes like the puletasi or lavalava. Western style clothes are clothes like long pants, short pants, or dresses. What kind of clothes do you wear for the following situations?
*O a itu'aiga la'ei e te fa'aaogaina?*

| *clothes you wear....* | **almost always Samoan** | **mostly Samoan** | **Either style** | **mostly Western** | **almost always Western** |
|---|---|---|---|---|---|
| **in school** | | | | | |
| **in church** | | | | | |
| **at home** | | | | | |
| **in the village** | | | | | |
| **in Fagatogo** | | | | | |
| **at the movies** | | | | | |

## References

'Aipolo, A., & Holmes, J. (1990). The use of Tongan in New Zealand: Prospects for language maintenance. *Journal of Multilingual and Multicultural Development, 11*, 501–521.

American Samoa Department of Education. (1974). *Think children*. Pago Pago, American Samoa: Author.

Baldauf, R. B. (1975). *Relationships between overt and covert acculturation in American Samoa.* Unpublished doctoral dissertation, University of Hawai'i, Honolulu.

Baldauf, R. B. (1981). Educational television, enculturation and acculturation: A study of change in American Samoa. *International Review of Education, 27*(3), 227–245.

Baldauf, R. B. (1982). The language situation in American Samoa: Planners, plans and planning. *Language Planning Newsletter, 8*, 1–6.

Baldauf, R. B. (1984). Language policy and education in American Samoa. *International Education Journal, 8*(11), 133–149.

Benton, R. (1981). *The flight of the Amokura*. Wellington: New Zealand Council for Educational Research.

Dorian, N. (1982). *Language death: The life cycle of a Scottish Gaelic dialect*. Philadelphia: University of Pennsylvania Press.

Fishman, J. (1965). *Language loyalty in the United States*. The Hague, The Netherlands: Mouton.

Freese, A. R. (1988, April). *How American educational policy and practice impact the language and culture of an American Pacific Island*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Gibbons, J. (1987). *Code-mixing and code choice: A Hong Kong case study*. Clevedon, England: Multilingual Matters.

Haleck, P. A., (1996). *Student voices: Samoan perspectives of ideal student and ideal teacher*. Unpublished doctoral dissertation, University of Hawai'i, Honolulu.

Huebner, T. (1986). Vernacular literacy: English as a language of wider communication and language shift in American Samoa. *Journal of Multilingual and Multicultural Development, 7*(5), 393–411.

Huebner, T. (1989). Language and schooling in Western and American Samoa. *World Englishes, 8*(1), 59–72.

Reid, C. F. (1941). *Education in the territories and outlying possessions of the United States*. New York: Teachers College.

Sanchez, P. C. (1955). *Education in American Samoa*. Palo Alto, CA: Stanford University.

Schramm, W., Nelson, L. M., & Betham, M. T. (1981). *Bold experiment: The story of educational television in American Samoa*. Stanford, CA: Stanford University.

Thomas, R. M. (1981). Evaluation consequences of unreasonable goals: The plight of education in American Samoa. *Education Evaluation and Policy Analysis, 3*, 41–49.

Thomas, R. M. (1984). American Samoa and Western Samoa. In R. M. Thomas & T. N. Postlewaite (Eds.), *Schooling in the Pacific Islands (pp. 203–235)*. Oxford, England: Pergamon.

## Authors

Anne R. Freese is the coordinator for the Master's of Education in Teaching (MET) Program and a faculty member in the Teacher Education and Curriculum Studies Department, University of Hawai'i at Mānoa. Her research interests include Pacific Island educational issues, teacher education, and teacher cognition.

Peggy A. Haleck is the principal investigator for the Territorial Teacher Training Assistance Program in American Samoa under the Department of Teacher Education and Curriculum Studies, College of Education, University of Hawai'i at Mānoa. Her research interests include cultural context of learning, teacher education, cognition, and multicultural issues.

*Pacific Educational Research Journal*
*Vol.10, No. 1, pp. 73–86*

# Teachers' Attitudes Toward Problem Behaviors in Japan and the U.S.

**Hideki Sano** and **Osami Fukushima**
*Tokyo Gakugei University*
**Evangelina Bustamante Jones, Russell L. Young, John D. Chamley**, and **Marian Aste**
*San Diego State University*

A cross-national quantitative study involving 38 teachers from Japan and 32 teachers from the United States was conducted to compare attitudes toward student behavior problems. Teachers were presented three vignettes involving problems of chronic absenteeism, verbal withdrawal, and aggressive behavior. A questionnaire was designed to measure the degree one valued authority, student centeredness, group conformity, and student autonomy. Results indicated that American teachers tended to be more authoritarian than Japanese teachers, while Japanese teachers tended to be more student centered and valued autonomy more than their American counterparts.



73

American researchers have long had an interest in Japanese education. This interest can be traced to two phenomena. First, business leaders and scholars seek to understand the relationship between the Japanese educational system and the incredible ascendancy of Japanese industry. Second, because the United States and Japan are highly industrialized nations, educators want to examine the Japanese system as a high-quality comparative reference (Duke, 1986; Stevenson & Sigler, 1992; U.S. Department of Education [DOE], 1987; White, 1987).

However, the Japanese educational system must first be examined within the context of the society it serves and its cultural values and practices. Then, the way school is structured and organized, how these features relate to patterns of student behavior, and the role of the teacher can be more easily understood. Taking it even further, a focus on teacher values and how these values are reflected in teacher attitudes toward and responses to student behavior problems, which can be considered as extreme manifestations of societal and cultural values and practices, can provide a means to view the qualities of teacher-student relationships in the Japanese educational system.

A cross-cultural approach in examining teacher attitudes and responses of Japanese and American teachers toward the same problem behaviors might prove useful in identifying and comparing key characteristics or qualities found in Japanese and American classrooms. Therefore, the purpose of this study was to examine the responses of Japanese and American teachers to three types of problematic behaviors by designing a quantitative instrument that measured responses through four teacher attitudes (non-authoritarian, student-centered, no group conformity, and student autonomy).

This paper begins by providing brief overviews and comparisons at four levels. First, Japanese and American cultural values and practices are contextualized through student patterns of social interaction. Second, parental perceptions of the role school plays in their children's lives are described. Third, a description of the structure and organization of schools in Japan and the United States serves as a context for explaining the most prevalent behavioral issues in each country. Fourth, teacher roles and teacher-student relationships in each country are compared. Following that, features and findings of the comparative study are described in detail.

The cultural values and norms of any given society provide an opportunity to understand its institutions and practices. Societal patterns of social interaction, for example, when perceived through school life, allow for some comparisons between societies. Japanese students tend to withdraw from social interaction and have a high rate of social anxiety and phobia (Uchinuma, 1990). The Japanese tendency to withdraw from social interaction when faced with school problems may be caused by the strong emphasis on group harmony and mutual obligation (Tobin, Wu, & Davidson, 1989; Cathcart & Cathcart, 1982). Japanese children are raised to be nonassertive and to sympathize with the group. They tend to avoid openly

expressing their own feelings and opinions when they differ from those of the group. In contrast, Americans tend to value individualism, privacy, equality, change, and assertiveness (Althen, 1988).

Parental attitudes toward education vary between the two cultures. Within Japanese tradition, each individual is the bearer of a family's continuity. Parents take very good care to shape their children's sense of responsibility toward the family and to provide every opportunity for the children's success. As a rule, Japanese families make considerable sacrifices for their children, and Japanese mothers often apply a special term for themselves that denotes how they push their children's academic success: *kyoiku mama* or, literally, "education mama" (Bilingual Education Office, California State Department of Education, 1987).

American parents, on the other hand, tend to value fulfilling each individual's personal potential. Americans assume that the development of children's social attitudes is the family's domain of duty, while teachers should assume the responsibility of teaching the cognitive domain of children's experience. Japanese parents expect elementary schools to develop the noncognitive aspects of human development as well as to impart cognitive skills (Cummings, 1980). This is not because Japanese parents leave all the educational responsibilities to schools, but because, in Japan, both parents and teachers are expected to share these responsibilities (Azuma, Kashiwagi, & Hess, 1981).

Examining aspects of the role school plays in a given society and how the school is structured may give insights into causes of student behavior problems (Elkind, 1981; Weisz, Suwanlert, Chaiyasit, Weiss, Walter, & Anderson, 1988; Weisz, Sigman, Weiss, & Mosk, 1993). In Japanese schools there is much greater competition for promotion to quality schools than in the United States. Going to a better school is absolutely crucial to obtaining better jobs and upward social mobility. Because the competition for admissions is so high, it is not surprising that Japanese schools have much longer instructional hours than their counterparts in the U.S. (Fiske, 1983). Moreover, students go farther than just attending regular school; most pupils go to extracurriculum schools (known as *juku*) in order to prepare for entrance exams for higher schools, leaving Japanese pupils little time left for family and friendship activities. Nakane (1973) points out that Japanese students have less developed competencies in social skills in comparison to their mastery of academic subjects, such as science and technology (Comber & Keeves, 1973). Japanese pupils often have little interaction with family members, particularly fathers who frequently work late.

As noted, the problems manifested in schools are greatly influenced by the society one lives in. In Japan, common pupil behavior problems include chronic absenteeism and bullying. Newspaper accounts of school attendance reported that in 1991, 67,000 pupils were out of school more than 30 days ("Chronic Absenteeism," 1992). Forty-five to 75 percent of the cases seen by

educational counselors are due to absenteeism (Fukushima, Matsumura, & Fujiwara, 1986). Japanese pupils who are stressed in school may withdraw from social interaction rather than face reality. Subsequent absenteeism may be caused by the extreme social pressure to achieve or "inadequate" child rearing. Bullying incidents can inflict psychological damage and even figure in suicidal behavior.

In American schools, student misbehavior and drug/alcohol abuse are commonly cited problems (Goodlad, 1984) as are lack of motivation and parental support (Brown & Payne, 1988). Teen pregnancy rate, student dropouts, and aggressive behavior are constant concerns in the United States (Attico, 1987; Dryfoos, 1985; Earle, Roach, & Fraser, 1987; Moyers, 1995).

Japanese societal values influence the teacher's role to be holistic in nature; students are not "contracted" out to specialists for the particular characteristics they bring to the classroom. Teachers are expected to guide students and to deal with personal habits and issues of motivation, as the teacher-student relationship is characterized by a more personal connection (Kataoka, 1992; U.S. DOE, 1987).

Much of the relationship between teachers and students can be better understood through the notion of *kizuna*, a relationship that reinforces the reciprocity of emotional commitment to one another. Teachers are encouraged to develop relationships with their students as equals, whereas American teachers are expected to assert their authority. *Kizuna* is exemplified by interpersonal relationships that foster empathy and can be characterized as the touching of hearts. To cultivate *kizuna*, teachers engage with children in interpersonal experiences that are (1) valued for their intrinsic rather than extrinsic rewards and (2) not based on hierarchical relationships (Shimahara & Sakai 1995; Shimahara & Sakai, 1992; Lewis 1989; White, 1987). *Kizuna* aids in understanding the Japanese practice of appealing to students' sense of guilt to promote discipline (Tsuneyoshi, 1992). It is interesting to note that the Japanese teacher-student relationship mirrors aspects of the Japanese mothering style: mothers are inclined to suggest indirectly what they expect their children to do, in contrast to American mothers who tend to issue clear and concrete directions in a firm voice (Azuma, Kashiwagi, & Hess, 1981).

American teachers use different styles of behavior control. For example, they tend to resort to their authority to control students, rewarding behaviors characterized by self-reliance and self-assertiveness (Shimahara & Sakai, 1995). As a result, the American classroom is focused on management of behaviors (Kaufman & Wong, 1991). Thus, when students present serious behavior problems, teachers rely more heavily on specialists. This explains the rise of professions such as special education, counseling, and school psychology (Thousand, 1990).

## Method

### Participants

There were two groups of subjects in the study. In Japan, 38 female teachers, with a mean age of 36 years, were administered questionnaires by the investigators during an in-service training session. In the U.S., 32 female teachers, with a mean age of 35 years, were administered questionnaires by the investigators while taking a course at a university.

### Materials

The instrument was initially designed and constructed in the Japanese language (Sakakura, Sano, & Fukushima, 1993). Then the instrument was translated into English by the Japanese investigators and edited for clarity by their American counterparts. It consisted of two components: three vignette-like case studies of student behavioral problems and a series of questions clustered around four types of teacher values that influence their responses to behavior problems.

No quantitative psychometric properties were calculated. Test-retest reliability data could not be collected due to the one-time opportunity to administer the questionnaire. A test of equivalence could not be done because only one form of the measurement was written. Calculation of internal consistency (split-half) proved to be unfeasible because of the small number of items.

As for validity, only content validity can be addressed. The instrument was designed by people with extensive school counseling experiences. All of the authors had experience working with teachers and students and thus were quite familiar with student problem behaviors and how teachers deal with them. In addition, care was taken to create a study with cross-cultural relevance. Research literature examining student problem behaviors across cultures was analyzed and yielded three categories into which problem behaviors can be classified: aggressive, withdrawing, and antisocial (Langfeldt, 1992; Weisz, Suwanlert, Chaiyasit, Weiss, & Jackson, 1991). The case studies illustrated the three problem behaviors through vignettes about excessive fighting in school (aggressive), chronic absenteeism (withdrawing), and extreme anxiety during interpersonal interactions/excessive silence (antisocial) (Sakakura, Sano, & Fukushima, 1993). (See Appendix for summaries of the vignettes.)

Following each case study were 24 Likert-scale items designed to measure the four types of teacher values that influence responses to the three types of behavior problems: (a) non-authoritarian (b) student-centered, (c) no group conformity, and (d) student autonomy. As noted in an earlier section of this article, these teacher values are reflected in both Japanese and American classrooms.

The format of the Likert-scale items was as follows. The first 12 items were statements made by two teachers analyzing the problem in the vignette; respondents were asked how much they agree or disagree with each analysis statement. The last 12 items were statements made by the two teachers directly to the student in the vignette. Respondents were asked to rate how much they agree with each teacher's approach.

It is important to explain how the responses were weighted. The Likert scale ranged from 1 (completely agree) to 5 (completely disagree). Scoring on some items was reversed so that a higher score reflected the teacher-value types. Thus, a higher score indicated more non-authoritarian, more student-centered, more nonconformity-to-group, or more student autonomy responses, while a lower score indicated more authoritarian, less student-centered, more conformity-to-group, or less student autonomy responses. Following are examples of items for each value type; they were reverse scored as indicated.

The first value type, non-authoritarian, reflected lack of conformity to an authority's wishes. Teachers with authoritarian responses would have agreed with the following: "should go back to school" (chronic absenteeism), "Naomi must be more verbal" (verbal withdrawal), and "nobody should use physical force to express himself" (aggressive behavior). A higher score indicated a more non-authoritarian response.

The second value type, student-centered, reflected acceptance of student behavior from a student perspective. Examples of student-centered responses included "Ken should stay at home for now" (chronic absenteeism); to be said to the student's parents, "You're not to blame" (verbal withdrawal); and, as an analysis of student interaction with others, "sometimes you can't get along with your friends" (aggressive behavior). In each case the scores were reversed so that a higher score indicated a more student-centered response.

Examples of the responses to the third value type, in which the student was expected to conform, included, to be said to the student, "Do not make your family suffer" (chronic absenteeism); to be said to the student, "Everybody would be happy to hear you speak" (verbal withdrawal); and as an analysis of student interaction with others, "Our class is noisy because of you" (aggressive behavior). A higher score indicated less group conformity, while a lower score indicated a more group conforming attitude.

The fourth value type, student autonomy, reflected acceptance of the student as an individual. These examples are of statements to be said to the student: "Go at your own pace" (chronic absenteeism); "Speak when you are ready" (verbal withdrawal); and "You can express yourself better and make more friends" (aggressive behavior). These scores were reversed so that a higher score indicated the teacher respondent valued autonomy.

## Results

Scores for items on each of the four teacher values were summed for a value score. Table 1 shows the mean scores of the Japanese and American teachers and the *t* values on the differences between the teachers for each value in the three vignettes.

Results indicate that Japanese teachers scored significantly higher than American teachers on three of the teacher value types in the chronic absenteeism vignette: non-authoritarian, student-centered, and student autonomy. Japanese teachers also scored significantly higher than American teachers on the teacher values of student-centered and student autonomy in the verbal withdrawal vignette. In the aggressive behavior vignette, Japanese teachers gave significantly more non-authoritarian responses than the American teachers. Total scores across the three vignettes indicated that Japanese teachers' scores were significantly more non-authoritarian, more student-centered, and more student autonomy oriented than the Americans'.

TABLE 1
*Japanese and American Teachers' Value Mean Scores and* t *Values*

| | | Japanese $N = 38$ | | American $N = 32$ | | |
|---|---|---|---|---|---|---|
| Vignette | Value type | *M* | *SD* | *M* | *SD* | *t* |
| Chronic absenteeism | Non-authoritarian | 17.82 | 3.98 | 14.35 | 3.33 | 3.86** |
| | Student-centered | 21.45 | 2.96 | 16.03 | 3.41 | 7.06** |
| | No Group Conformity | 21.26 | 3.64 | 20.74 | 4.27 | 0.55 |
| | Student Autonomy | 23.76 | 2.51 | 19.19 | 4.84 | 5.05** |
| Verbal withdrawal | Non-authoritarian | 19.05 | 4.21 | 20.42 | 4.06 | -1.36 |
| | Student-centered | 21.53 | 3.63 | 17.71 | 3.84 | 4.23** |
| | No Group Conformity | 19.87 | 3.75 | 18.58 | 3.88 | 1.40 |
| | Student Autonomy | 24.76 | 2.60 | 21.55 | 3.73 | 4.21** |
| Aggressive behavior | Non-authoritarian | 15.13 | 3.72 | 12.06 | 3.69 | 3.42** |
| | Student-centered | 20.45 | 2.91 | 20.87 | 4.03 | -0.51 |
| | No Group Conformity | 19.34 | 3.42 | 20.23 | 2.94 | -1.14 |
| | Student Autonomy | 21.47 | 2.92 | 20.74 | 3.99 | 0.88 |
| Total | Non-authoritarian | 52.00 | 10.03 | 46.84 | 8.88 | 2.24* |
| | Student-centered | 63.42 | 8.00 | 54.61 | 7.53 | 4.67** |
| | No Group Conformity | 60.47 | 9.62 | 59.55 | 9.21 | 0.40 |
| | Student Autonomy | 70.00 | 6.67 | 61.48 | 9.87 | 4.26** |

* $p < .05$. ** $p < .01$.

## Discussion

The results show that in comparison to American teachers, Japanese teachers tended to be less authoritarian, were more student-centered, and placed a higher value on student autonomy. Japanese teachers' responses can be understood when their holistic relationship with their students is taken into account. As noted, Japanese teachers form strong emotional ties with their pupils (White, 1987; Duke, 1986), often taking on a parent-like role. Being too authoritarian is likely to hinder the formation of *kizuna*. Having a student-centered orientation and valuing student autonomy may assist teachers in developing close bonds to their students.

American teachers may be more authoritarian because of their higher emphasis on classroom management. In the American classroom, emphasis on a strict adherence to rules takes precedence over the American values of individualism and autonomy. Therefore, American teachers, at least comparatively speaking, want their students to conform to institutional structure and authority at the expense of student autonomy. For Americans, this creates conflict not only in how to manage a classroom but also in how to nurture student independence.

One of the most surprising findings is the similarity in scores for group conformity. When the Japanese values of group harmony and mutual interdependence are taken into account, an expected result would be that the Japanese teachers would have responded more strongly to the survey items reflecting group conformity, but this was not shown (Tobin, Wu, & Davidson, 1989; Cathcart & Cathcart, 1982).

However, three observations can be made which explain the similarity of results between the groups. First, it may certainly be the case that in Japan, group conformity is a social strategy to make individuals adjust to the norm, and there is immense social pressure for Japanese students to maintain group harmony in a normal school atmosphere. And in spite of American values that center on individualism, these are mediated by the equally high value placed on classroom control, thus serving to bring the value of conformity closer together in the two groups because the vignettes are specifically school based.

Second, the difference in the degree of cultural diversity and its relationship to the roles Japanese and American teachers play in their classrooms need to be taken into account. At one end of the spectrum is Japan, which does not have strong interethnic competition or large minority groups. Its culture is mostly homogeneous. In such a society, normative behaviors are clear, and cultural mismatch between teacher and student is rarely an issue. Japanese teachers may try to look at the whole personality of the pupil rather than to attribute specific problem behaviors to cultural differences. In contrast, American teachers work in classrooms that reflect the nation's quickly growing diversity. Issues of cultural mismatch, clashes of

cultural values, or lack of knowledge of each others' cultures can result in teacher-student relationships less likely to be based on emotional ties and more likely to address a specific problem behavior rather than the pupil's whole personality. Moreover, American teachers more often rely upon and work with counselors and other specialists whose task is to focus on students' characteristics (which usually do not fit into the norm) that are seen to impede the smooth running of a class.

As a consequence of these and other factors, American teachers may define their work solely in terms of their teaching, at least much more so than their Japanese counterparts. American teachers may be more concerned with a pupil's conduct (and respond by being authoritarian) or wish to assimilate their ethnically diverse students by emphasizing similarities and conformity, resulting in an environment that is less student oriented and supports less student autonomy.

Finally it is important to note that the case-study vignettes depicted behaviors that were all but normal. The seriousness of the behavior problems may have produced a wish in both groups of teachers for student conformity to group norms as a way to solve the issues.

Another finding was that the score difference between the two groups varied across the types of problems presented, which may be related to differences in each group's cultural familiarity with the problems thus exhibiting different degrees of sympathy. For example, as noted in an earlier section, Japanese teachers are familiar with chronic absenteeism issues, while American teachers may be more prone to encounter problems involving aggressive behavior. American teachers may be more familiar with problems of verbal withdrawal than chronic absenteeism. Also, the context presented in the case study of the chronically absent student was probably more familiar to a Japanese audience. (See Appendix for summaries of case studies.) In the United States, a chronically absent student is more likely to be outside the home during school hours "hanging out with friends" than a Japanese student. Even though the scores of the American sample tended to be lower than the Japanese, their scores showed larger differences across problems, possibly indicating that their attitudes toward different problems are more differentiated (i.e., problem specific) than the Japanese.

The methodology used in the study may have also affected the outcomes. The case-study vignettes and survey questionnaires were originally written by Japanese researchers, who described typical Japanese problem behaviors; these were then translated to English. The researchers were unable to use back-translation methods. However, two factors helped in the accuracy of the translation. First, the translation was conducted by one of the Japanese authors who is highly literate in both Japanese and English. He received his doctorate in the United States. Also, since his field of study is psychology, the terms were quite familiar to him. Secondly, the vignettes were short and were devoid of technical, complex terms.

It is possible that Japanese teachers may have felt more familiar with the task and answered in a more socially desirable way. In contrast, some American teachers may have been confused about the task and felt less confidence in their answers, certainly a situation that would decrease the reliability of the data. Moreover between the two cultures, the demand characteristics of data collection might also have been different. For Japanese teachers the questionnaire may have been perceived as a test of their teaching knowledge, while the Americans may have seen it only as a part of a research study conducted in their university course and not connected with a grade or evaluation; thus their answers were not going to have any impact on anyone's perception of their competence as teachers. Finally, teachers of both countries responded in culturally appropriate ways. For these reasons, it is necessary to caution against drawing conclusions about the superiority of teachers from the two cultures. What may have been a more appropriate approach for the Japanese teachers may have been less appropriate in an American context and vice versa.

The study was limited by the demographic information on the teachers in the study. Although the samples were comparable in that the mean age and sex compositions were similar, lack of demographic information and the small samples limit the generalizability of the results.

Lastly, the analysis utilized multiple *t* tests, which have the weakness of raising the probability of finding significant results by chance. However, it is highly unlikely that one would find the results of this study due merely to chance. Of the 12 *t* values calculated (see Table 1), 6 were significant at the .01 level. Even when totaled across the three vignettes, three of the four value types had significant *t* values, two of them at the .01 level. These results indicate that the difference between the Japanese and American samples was highly unlikely due to random chance.

## Appendix
## Summarized Content of Three Vignettes

Case Study of Chronic Absenteeism

Ken has been staying home since the middle of 8th grade with symptoms of stomach pains and headaches. He has hardly attended school in 9th grade and does not give a reason. Ken is an only child, and his parents both work full time. He abuses his mother verbally, stares at his father, and breaks dishes. His parents now avoid talking about school. Ken has average intellectual ability and is shy.

Case Study of Verbal Withdrawal

Naomi is completely silent at school during both classes and breaks and has been so since kindergarten. Naomi's parents both work, and they discipline her strictly. She is the oldest of three girls and is nervous, bashful, stubborn and selfish. She speaks little and softly at home, less while out shopping with her mother, and not at all if her classmates pass by. Her grades are average.

Case Study of Aggressive Behavior

Jiro is considered to be the roughest boy in his grade and is feared by the other pupils. He punched and injured an upper grader and one time knocked down pupils in the same grade. Jiro's homeroom teacher understands that his violent behavior is not really driven by hostility. He has a side of gentleness and justice. Once he wanted to help a child who was harassed by a group and started a fight for him. Jiro is at the average level in ability and achievement, is physically very strong, and not good at expressing his opinions verbally.

## References

Althen, G. (1988). *American ways: A guide for foreigners in the United States.* Yarmouth, ME: Intercultural Press.

Attico, N. B. (1987). Adolescent pregnancy: A medico-social epidemic of the 1980's. *The HIS Primary Care Provider, 12*(2), 9–12.

Azuma, H., Kashiwagi, K., & Hess, R. (1981). *Attitude and behavior of mothers and the intellectual development of children: A comparative study between Japan and the United States.* Tokyo: Tokyo University Press.

Bilingual Education Office, California State Department of Education. (1987). *Handbook for teaching Japanese-speaking students.* Sacramento, CA: Author.

Brown, W., & Payne, T. (1988). Policy/practices in public school discipline. *Academic Therapy, 23*(3), 297–301.

Cathcart, D., & Cathcart, R. (1982). Japanese social experience and concept of groups. In L. Samovar & R. Porter (Eds.), *Intercultural communication: A reader* (pp. 120–126). Belmont, CA: Wadsworth.

Chronic absenteeism: It's not a special case. (1992, December 7). *Asahi News*, p. B6.

Comber, L. C., & Keeves, J. P. (1973). *Science education in nineteen countries: An empirical study*. Uppsala, Sweden: Almqvist & Wiksell Information Industry.

Cummings, W. (1980). *Education and equality in Japan*. Princeton, NJ: Princeton University Press.

Dryfoos, J. (1985). What the United States can learn about prevention of teenage pregnancy from other developed countries. *SIECUS Rep, 15*(2), 1–7.

Duke, B. (1986). *Japanese school: Lessons for industrial America*. New York: Preger.

Earle, J., Roach, V., & Fraser, K. (1987). *Female dropouts: A new perspective*. Alexandria, VA: National Association of State Boards of Education. (ERIC Document Reproduction Service No. ED 292 939)

Elkind, D. (1981). *The hurried child: Growing up too fast too soon*. New York: Addison-Wesley.

Fiske, E. B. (1983, October 2). Japan's school. *New York Times*, p. 128.

Fukushima, O., Matsumura, S., & Fujiwara, K. (1986). *Report on survey on educational counseling training and counseling activities*. Tokyo: Tokyo Gakugei University.

Goodlad, J. I. (1984). *A place called school*. New York: McGraw-Hill.

Kataoka. T. (1992). Class management and student guidance in Japanese elementary and lower secondary schools. In R. Leestma & H. J. Walberg (Eds.), *Japanese educational productivity* (pp. 69–102). Ann Arbor: University of Michigan.

Kaufman, J. M., & Wong, K. L. H. (1991). Effective teaching of students with behavioral disorders: Are generic teaching skills enough? *Behavioral Disorders, 16*(3), 225–237.

Langfeldt, H. P. (1992). Teachers' perceptions of problem behaviour: A cross-cultural study between Germany and South Korea. *British Journal of Educational Psychology, 62*, 217–224.

Lewis, C. (1989). From indulgence to internalization: Social control in the early school years. *Journal of Japanese Studies, 15*(1), 139–157.

Moyers, B. (1995, January 8). What we can do about aggressive behavior. *San Diego Union Tribune Parade Magazine*, pp. 4–6.

Nakane, C. (1973). *Japanese society*. Rutland, VT: Tuttle.

Sakakura, S., Sano, H., & Fukushima, O. (1993). The effects of counseling training: Study on the differences among teachers with training, regular teachers and guidance teachers. *The Japanese Journal of Counseling Science, 26*(2), 139–145.



30

Shimahara, N. K., & Sakai, A. (1992). Teacher internship and the culture of teaching in Japan. *British Journal of Sociology of Education, 13*(2), 147–162.

Shimahara, N. K., & Sakai, A. (1995). *Learning to teach in two cultures: Japan and the United States.* New York: Garland.

Stevenson, H. W., & Sigler, J. W. (1992). *The learning gap: Why our schools are failing and what we can learn from Japanese and Chinese education.* New York: Summit Books.

Thousand, J. S. (1990). Organizational perspectives on teacher education and renewal: A conversation with Tom Skrtic. *Teacher Education and Special Education, 13*(1), 30–35.

Tobin, J., Wu, D., & Davidson, D. (1989). *Preschool in three cultures.* New Haven, CT: Yale University Press.

Tsuneyoshi, R. (1992). *Ningen-keisei no nichibei hikaku-Kakureta Karikyuramu* [Personality formation—A Japan-U.S. comparison of hidden curricula]. Tokyo: Chuo Koron Sha.

Uchinuma, Y. (1990). *Interpersonal phobia.* Tokyo: Kodansha International.

U.S. Department of Education. (1987). *Japanese education today.* Washington, DC: U.S. Government Printing Office.

Weisz, J. R., Sigman, M., Weiss, B., & Mosk, J. (1993). Parent report of behavioral and emotional problems among children in Kenya, Thailand, and the United States. *Child Development, 64*(1), 98–109.

Weisz. J. R., Suwanlert, S., Chaiyasit, W., Weiss, B., & Jackson, E. W. (1991). Adult attitudes toward over- and under-controlled child problems: Urban and rural parents and teachers from Thailand and the United States. *Journal of Child Psychology and Psychiatry, 32*(4), 645–654.

Weisz, J. R., Suwanlert, S., Chaiyasit, W., Weiss, B., Walter, B. R., & Anderson, W. W. (1988). Thai and American perspectives on over- and under-controlled child behavior problems: Exploring the threshold model among parents, teachers and psychologists. *Journal of Consulting and Clinical Psychology 56*(4), 601–609.

White, M. (1987). *The Japanese educational challenge: A commitment to children.* Tokyo: Kodansha International.

## Authors

Hideki Sano is an associate professor of psychology at Tokyo Gakugei University. His current research interests are school counseling and cross-cultural counseling.

Osami Fukushima is a professor at Tokyo Gakugei University. His current research interests are methods in counseling and psychotherapy and liaison counseling.

Evangelina Bustamante Jones is an assistant professor at San Diego State University. Her current research interest is bilingual education.

Russell L. Young is an associate professor at San Diego State University. His current research interests are multicultural education and Asian Studies.

John D. Chamley is a professor at San Diego State University. His current research interests are counseling and organizational development.

Marian Aste is an instructor at San Diego State University. Her current research interest is multicultural education.

*Pacific Educational Research Journal*
*Vol. 10, No. 1, pp. 87–105*

# Preservice Teachers' Perceptions of Risks

**E. Barbara Klemm, Marie K. Iding,**
**Thomas W. Speitel,** and **John S. Ige**
*University of Hawai'i at Mānoa*

In this study, 32 preservice teachers in Hawai'i ranked 30 potential environmental risks identified by Slovic (1987), described bases for their evaluations of risks, and selected 3 risks of global, local, and personal importance that their students should learn about. Preservice teachers' rankings were compared to expert rankings from Slovic, and interesting differences emerged. Several bases for teachers' risk perceptions are discussed. Preservice teachers' choices of topics for their students to learn comprised 21 categories and included topics not on Slovic's list. Implications for preservice teacher education, especially in Hawai'i, and for regional studies of risk assessment are discussed.

Scientific literacy involves understanding and interpreting scientific information reasonably and accurately. All of us, including scientists, make daily decisions regarding the results of "scientific" research reported in newspapers and on television. These decisions affect many aspects of our lives, including the foods we eat, nutritional supplements we take, medications and medical procedures we elect, activities we engage in, and environmental hazards we choose to ignore or remediate. Furthermore, the nature and severity of risks can vary depending upon geographic region, and perceptions of risks may be influenced by cultural, geographic, social, and geopolitical factors. This suggests that understanding risk perception and assessment needs to be localized as a first step toward the goal of educating students about risks.

In Hawai'i, for example, the unique geophysical and cultural features of a Pacific island setting contribute to a constellation of risk factors that differ in significant ways from those encountered on the continental United States, where most media accounts of environmental risks are generated. In Hawai'i and other Pacific islands, natural hazards include tsunamis, hurricanes, drought and limited fresh water supplies, volcanic eruptions, earthquakes, and tropical diseases. Human-induced hazards include water pollution, degradation of coral reefs, population pressure on limited land areas, impacts of tourism and other resource use, and waste management. We know that environmental damage associated with human impact can be severe, considering that Hawai'i is the state with the highest number of endangered species in the U.S. (Stone, 1999).

Furthermore, the range of risk behaviors that Hawai'i's students report engaging in differs on some dimensions from those reported by U.S. mainland students. For example, Pateman, Saka, and Lai (1996) reported that, in response to the Youth Risk Behavior Survey administered to 9th through 12th graders, Hawai'i's students report higher frequencies than the national averages for engaging in nine areas of risk, including less motorcycle and bicycle helmet use, higher rates of marijuana use before the age of 13, more suicide attempts, and lower rates of condom use for the sexually active. More students in Hawai'i reported being somewhat or very overweight, and more students reported eating high-fat meat products. Fewer participated in weekly physical education or school-sponsored sports. Other risk behaviors reported by Hawai'i's students were similar to those reported by mainland students, for example, frequencies of alcohol, tobacco, and violence-related behaviors.

While self-reports of risk behavior are central to understanding where education and interventions need to be aimed, they do not tell us what level of knowledge or understanding students have about risks. The question of the relationship between knowledge about a risk and the decision to engage in that risk remains, at least with respect to Hawai'i's youth, largely unexamined.

**What is Risk Perception/Assessment**

Both the *Benchmarks for Science Literacy* (American Association for the Advancement of Science [AAAS], 1993) and the *National Science Education Standards* (National Research Council [NRC], 1996) include the study of risks as a component of science literacy. *Benchmarks for Science Literacy* explains,

> Students should realize that analyzing risks entails looking at probabilities of events and at how bad the events would be if they were to happen. Through surveys and interviews, students can learn that comparing risks is difficult because people vary greatly in their perception of risk, which tends to be influenced by such matters as whether the risk is gradual or instantaneous (global warming versus plane crashes), how much control people think they have over the risk (cigarette smoking versus being struck by lightning), and how the risk is expressed (the number of people affected versus the proportion affected). (AAAS, 1993, p. 52)

Analysis of risk involves "application of probability theory and subjective judgment" (Riechard & McGarrity, 1994, p. 20). Interestingly, people are typically erroneous in their judgments of risks; furthermore, they tend to be excessively confident in their own judgments of risks (Covello as cited in Cutter, 1993).

As is further explained in *Benchmarks for Science Literacy* (AAAS, 1993), these issues are as pressing to the scientific nonexpert as to the expert and are central to our notions of what it means to be scientifically literate.

> In everyday life, people are bombarded with claims—claims about products, about how nature or social systems or devices work, about their health and welfare, about what happened in the past and what will occur in the future. These claims are put forth by experts (including scientists) and nonexperts (including scientists), by honest people and charlatans. In response to this barrage, trying to separate sense from nonsense, knowledge helps.
>
> But apart from what they know about the substance of an assertion, individuals who are science literate can make some judgments based on its character. The use or misuse of supporting evidence, the language used, and the logic of the argument presented are important considerations in judging how seriously to take some claim or proposition. These critical response skills can be learned and with practice can become a lifelong habit of mind. (p. 298)

It is clear in this era of burgeoning information and media sensationalism that teaching students how to assess and use information sources is more central to the teacher's role than is teaching them how to memorize isolated scientific facts. However, the topic of risk assessment has received limited attention from the educational research community and remains a topic

about which teachers are frequently uninformed. Furthermore, an understanding of the local factors contributing to students' and teachers' risk perception is lacking in Hawai'i.

To create a foundation of research that can help to determine the needs of teachers in learning more about risk assessment in Hawai'i, we first examine several national-level studies in the area of risk assessment that have implications for educators. We then present a study in which we examine risk assessments made by preservice teachers in Hawai'i and the multiple bases that they use for determining risks. From this study, we derive preliminary implications for preservice teacher education in the area of risk analysis.

**Prior Research on Risk Assessment and Risk Education**

Riechard and McGarrity (1994) argue that educational procedures related to risk should be developed, along with a research base for identifying the basis of environmental risk perceptions. They explain,

> More than a decade ago, Fischhoff, Lichtenstein, Slovic, Derby, and Keeney (1981) called for the development of methods for studying perception of risk and educational procedures related to risk. Such efforts, however, were hampered by a lack of theory and research basis on which to build. (National Research Council, 1989; Riechard, 1993). (Riechard & McGarrity, 1994, p. 17)

In response to this need, Riechard and McGarrity (1994) carried out a study assessing adolescents' perceptions of risks associated with environmental hazards. They found discrepancies between adolescents' perceptions and actual statistical probabilities associated with environmental risks. For example, they found that adolescents rated war as the most feared environmental hazard, although the number of people from the U.S. killed annually from wars is less than the number killed from car accidents, even during the Vietnam War (Miller, 1992; Riechard & McGarrity, 1994). Nuclear energy was rated as the second most feared hazard by adolescents, although risk experts rated it as less risky than using bicycles, cars, or alcohol. Riechard and McGarrity (1994) concluded

> Special attention should be given to helping students close the gap between their perceptions of risk and risk estimates supported by factual data. The long-term goal should be the production of a risk-literate citizenry that demonstrates responsible decision making when faced with societal and environmental hazards. (p. 22)

A recent study was carried out by Riechard and Peterson (1998), in which they examined precollege students' perceptions of risk. The students whose perceptions they examined were described as from the "southeastern United States." They were given a list of 20 risks to rate. The list misses many areas that would be appropriate to the Pacific islands, including coral reef

degradation, tsunamis, volcanic activity, and so forth. To the extent that such studies are specific to mainland geophysical features and culture, they do not provide a reasonable representation of Hawai'i students' assessments of risks. Riechard and Peterson (1998) argued that the risks associated with the highest scores tended to be ones most highly publicized in the media. Extrapolating from this point, it seems clear that the extent to which regions like Hawai'i are dominated by national news media, perceptions of risk will reflect national, and potentially less locally relevant, areas of risks.

Furthermore, despite limited educational research, risk assessment has been recognized as important in other venues, such as *Discover* magazine (e.g., "The Science of Risk" special issue; Hoffman, 1996) and *Smithsonian* (e.g., Ross, 1999). In 1987, *Science* devoted an entire issue to "Immortality and Risk Assessment." In that issue, a seminal study was reported on risk assessment by Slovic (1987) in which perceptions of risks for various "activities and technologies" were rated by members of four groups: experts, the League of Women Voters, college students, and "active club members." Again, there were marked discrepancies between experts' and others' ratings of risks in some categories, such as nuclear power being rated as the highest perceived risk by members of the League of Women Voters and college students, in contrast to experts' choice of motor vehicles as the top risk and nuclear power as the 20th. Slovic (1987) noted the value in work on risk assessment for effective public policy determination: "This work assumes that those who promote and regulate health and safety need to understand how people think about and respond to risk. Without such understanding, well-intended policies may be ineffective" (p. 280). The case for understanding the public's bases for risk assessment is clearly made in Slovic's (1987) work, which has more recently expanded to consider a range of social and cultural factors involved in a process that has been aptly coined "the social amplification of risk" (Renn, Burns, Kasperson, Kasperson, & Slovic, 1992). For example, Renn et al. found that while experts relied on fatality rates in determining risks, nonexperts relied heavily on perceived rates of exposure to risks.

One of the major goals of all of this work is the production of an informed citizenry (Riechard & McGarrity, 1994). Although newspaper accounts and the media in general are recognized as the major conduits of information regarding risks, the need for risk education in the schools has been called for by authors, such as Gregory (1991), who suggest that the curriculum include "defining a defensible decision perspective, making choices under uncertainty, and thinking about the consequences of an activity" (p. 275).

Although teachers are central to any educational effort, to our knowledge, no research has been carried out regarding teachers' or preservice teachers' perceptions of risk and the importance of studying risk. As Riechard and McGarrity (1994) contend, "Given the need for a better understanding of risk, it seems ironic that the education profession has been reluctant to

embrace risk education" (p. 16). Furthermore, many teachers feel unprepared to deal with topics related to environmental education, in general (e.g., Lane, Wilke, Champeau, & Sivel, 1994, 1995, 1996).

Given that both the *Benchmarks for Science Literacy* and the *National Science Education Standards* (NSES) call for the introduction of risk analysis and technology assessment, there is a need for developing a preliminary understanding of how teachers perceive these topics. This understanding can guide the development of strategies for effective preservice teacher preparation in choosing topics to be used in risk education, resources to support inquiry, misconceptions to be addressed, and thinking skills to be fostered. Additionally, there is a need to understand local factors that contribute to risk perception in Hawai'i.

### The Present Study

In this paper we first examine Hawai'i elementary and secondary preservice teachers' perceptions of potential environmental risks associated with various activities and compare their rank orders to those of experts. We expect that secondary preservice teachers, having taken more science courses, would assess risks more similarly to experts than would elementary preservice teachers. We then investigate how preservice teachers rate risks, their characterizations of the attributes of risks, and what topics they would choose to teach to their students related to global, local, and personal risks. Finally, we discuss implications for preservice teacher preparation related to teaching about risks and risk assessment, especially within the unique cultural and geophysical environment of Hawai'i.

## Method

### Subjects

Participants were 18 preservice teachers enrolled in a preservice elementary science methods course and 14 preservice teachers enrolled in a preservice secondary science course in Hawai'i. Both groups were ethnically diverse, including students of Japanese, Chinese, Filipino, Pacific Island, and Caucasian ancestries.

### Instruments

*Risk Ranking Computer Program*

A HyperCard computer program was constructed to facilitate risk sorting. Thirty environmental hazards were listed in alphabetical order on a computer screen. The list of hazards was adopted directly from Slovic (1987), because Slovic's work is considered seminal in this area, and researchers like Cutter (1993) have criticized the lack of replication of this study among other populations. The preservice teachers were asked to rank the activities and technologies that they considered most risky. Each sorted the list of 30 items

by sliding words into their perceived order with the highest risks at the top. Then, separate means were calculated for each risk for elementary and secondary preservice teachers, enabling a ranking of risks from 1 (*greatest*) to 30 (*least*) risk.

*Questionnaire*

To further assess the preservice teachers' multiple bases for assessing risks and judgments of topics important for their students, a printed questionnaire was developed with the following subsections:

1. Bases for Judging Risks During the Computer Sort. The preservice teachers rated seven possible bases for judging risks on a Likert scale ranging from 1 (*least important*) to 7 (*most important*). These bases were adapted from Slovic's (1987) and Cutter's (1993) characterizations of perceptions of risks deriving from factor analyses. They included the following: knowledge of mortality (deaths per year during an average year) related to risk, potential immediate risk to individual, potential delayed adverse risk to individuals, threat to future generations, risk to environment, catastrophic potential, and general dread.

2. Characteristics of Highest Risks. Preservice teachers were asked to write down the three top-ranked risks from their computer sort. To further probe their bases for selecting risks, they were given a forced-choice option to characterize each risk as a voluntary, known risk; voluntary, unknown risk; involuntary, known risk; or involuntary, unknown risk. These risk characteristics were derived from factor analyses by Slovic (1987) and were also described in Cutter (1993). In Slovic's (1987) work, unknown, involuntary risks were often characterized as most dreaded (e.g., nuclear war).

3. Risks Selected as Top Teaching Priorities. In this subsection the preservice teachers were asked to respond from the perspective of a teacher and list three risks of global importance, three risks of local importance, and three risks of personal importance that they believed their students should learn about.

**Procedure**

Preservice teachers completed the computer risk-sorting activity and questionnaires during a 2.5-hour class session. Thereafter, discussion in both classes centered on the nature of risks locally and personally, and about the role of science teachers in teaching about risks. Discussions were linked to ongoing lesson and unit planning activities in both courses.

## Results and Discussion

### Preservice Teachers' Ratings Compared to Experts' Ratings

Table 1 shows how preservice elementary and secondary teachers in Hawai'i ranked each of the environmental risks as compared to the ranks of experts reported by Slovic (1987). As compared to experts, the preservice teachers underestimated 30% of the risks and overestimated 33%.

TABLE 1
*Comparison of Experts' and Preservice Teachers' Rank Orders of Risk Activities*

| Risk activity[a] | Experts[b] | Elementary preservice | Secondary preservice |
|---|---|---|---|
| Motor vehicle | 1 | 6 | 14 |
| Smoking | 2 | 2 | 2 |
| Alcoholic beverages | 3 | 5 | 4 |
| Handguns | 4 | 1 | 1 |
| Surgery | 5 | 11 | 11 |
| Motorcycles | 6 | 4 | 7 |
| X-Rays | 7 | 18 | 15 |
| Pesticides | 8 | 9 | 8 |
| Electric power (nonnuclear) | 9 | 16 | 16 |
| Swimming | 10 | 28 | 27 |
| Contraceptives | 11 | 24 | 29 |
| Private aviation | 12 | 13 | 13 |
| Large construction | 13 | 14 | 12 |
| Food preservatives | 14 | 29 | 23 |
| Bicycles | 15 | 27 | 26 |
| Commercial aviation | 16 | 15 | 21 |
| Police work | 17 | 8 | 5 |
| Fire fighting | 18 | 7 | 3 |
| Railroads | 19 | 21 | 22 |
| Nuclear power | 20 | 3 | 6 |
| Food coloring | 21 | 30 | 30 |
| Home appliances | 22 | 25 | 25 |
| Hunting | 23 | 12 | 9 |
| Prescription antibiotics | 24 | 19 | 24 |
| Vaccinations | 25 | 26 | 28 |
| Spray cans | 26 | 22 | 20 |
| High-school and college football | 27 | 20 | 18 |
| Power mowers | 28 | 23 | 19 |
| Mountain climbing | 29 | 10 | 10 |
| Skiing | 30 | 17 | 17 |

[a]The list of risk activities was adopted from Slovic (1987). [b]Rankings by experts were reported by Slovic (1987).

To examine specific differences between experts and preservice teachers, there were some notable areas in which teachers underranked risks involving activities or technologies that could very likely affect students whom they will teach. For example, experts ranked motor vehicles as the number one risk, while elementary preservice teachers ranked motor vehicles 6th, and secondary preservice teachers ranked this item as 14th. This difference is especially striking for secondary teachers, as their students are just beginning to drive during this time. It is also striking in light of the fact that motor vehicle accidents are one of Hawai'i's leading causes of death (Hawai'i State Department of Health, as cited in Pateman et al., 1996).

Similarly, experts rated swimming 10th and contraceptives 11th, while preservice teachers' ratings placed these risks 24th through 29th. In Hawai'i, drowning is another leading cause of death for youth (Hawai'i State Department of Health, as cited in Pateman et al., 1996). As another salient example, experts rated bicycles 15th, while elementary preservice teachers rated them 27th, and secondary preservice teachers rated them as 26th.

It would seem that most teachers would benefit from knowing that activities or technologies like motor vehicles, swimming, contraceptives, and bicycles, which could easily affect their students, are typically underrated. Similarly, medical technologies that are likely to affect most people at some time in their lives, specifically x-rays and surgery, were underrated as risks by teachers. With many new medical technologies currently being developed and publicized, it would seem that teachers and students would want to know how medical risks are calculated.

Risks less likely to affect students, but overestimated by teachers, included nuclear power, which elementary and secondary preservice teachers ranked as 3rd and 6th, respectively, in contrast to the experts' ratings, which placed it 20th. This tendency to rank nuclear power very high as a risk replicates the trend observed by Slovic (1987).

Teachers also overestimated risks inherent in sports like football, mountain climbing, and skiing, perhaps due to their perception of students as more likely to participate in these sports, or due to media attention to accidents and injuries associated with these sports. Teachers would probably be interested in knowing that bicycles, motorcycles, and motor vehicles are ranked by experts as associated with higher levels of risk than the sports that are highly ranked by preservice teachers.

Finally, both elementary and secondary preservice teachers ranked handguns as the highest of all risks, while experts ranked them 4th. Although these ratings are not very different, it is interesting to consider the basis for teachers ranking this risk as highest of all. It is very likely that recent media attention to incidents involving handguns in schools prompted this rating.

Preservice teachers' rankings exactly matched experts' only on smoking, ranked by all as the second highest risk. Overall, only 36% of their rankings

were similar to experts'. Although this indicates a lack of accurate information, it does not imply that teachers need to have expert knowledge in order to be prepared for teaching risk topics. With respect to teaching risk topics, the authors of *Benchmarks for Science Literacy* (1993) contend that the "teachers' job is not to provide students with the 'right' answers about technology but to see to it that students know what questions to ask" (p. 56). What this implies is that one question to learn to ask is how one's prior experiences and perceptions bias assumptions and inquiry related to technologies and associated risks.

It is clear from these findings that teachers need to learn how risk assessment is conducted, how media and culture affect the interpretation of expert information, and how media, cultural, and political biases and agendas affect even their own perceptions of what they think to be common knowledge.

It is also clear that local or cultural contexts for characterizing risks need to be considered. For example, the particular geopolitical/cultural context of a region needs to be considered. In Hawai'i, swimming and bicycling are greatly underemphasized as risks, although these are activities that Hawai'i residents are likely to engage in regularly, throughout the year, suggesting that familiarity with the activities may, at least in some instances, lessen the perception of risk. By the same token, teachers in Hawai'i tend to overemphasize some risks like skiing and mountain climbing, activities that are seldom engaged in, except when Hawai'i residents visit other geographic regions. Similarly, local factors could be important in determining why nuclear power is overemphasized by Hawai'i teachers as a risk, although Slovic's (1987) subjects also overemphasized it. Hawai'i residents, for example, are more likely to be aware than people elsewhere of the legacy of nuclear disasters in the Pacific from weapons testing and the deployment of nuclear devices. By contrast, people who reside near nuclear power plants might be more apt to focus on media accounts of nuclear power plant disasters in determining risks.

**Rank-Ordered Basis for Judging Risks**

To further determine how preservice teachers judged the risk of activities in the Slovic (1987) list, they were asked to rank order seven bases for judging risks from most important to least important. Separate means were calculated for each of the seven bases for elementary and secondary preservice teachers. Means were used to determine rankings for each group. Table 2 shows the resulting mean ranks and corresponding overall rankings. Notable differences emerged with respect to two categories.

First, there were differences in elementary and secondary teachers' rankings of "Potential immediate risk to the individual." Secondary teachers ranked it first, providing a clear indication that risks of importance to them are those that may be characterized as immediate and personal. Elementary

teachers ranked it in sixth place (tied with "Knowledge of mortality related to risk"). It is likely that elementary teachers interpret risks for their students as associated with activities over which they will have voluntary control in the future but do not have control over or participate in voluntarily in the present (e.g., driving motor vehicles).

For the category "General dread" there was a large difference in teachers' mean rankings; elementary teachers rated it fifth ($M = 3.77$), and secondary teachers rated it seventh ($M = 2.14$). In Slovic's (1987) research, risks ranked high on the "dread" dimension included such risks as nerve-gas accidents and those associated with nuclear disasters (i.e., war, reactor accidents, weapons fallout). It is interesting that while the nonexperts in Slovic's (1987) research and the preservice teachers in the present study rated nuclear power high as a risk compared to experts, when considered explicitly as a basis for rating risks, general dread was rated as less important.

Both groups ranked "Knowledge of mortality" sixth, indicating that this is low in importance in rating risks. Because the term mortality was defined on the survey as "deaths per year during an average year," the low rank cannot be explained by inadequate understanding of the term. It might, however, indicate a lack of knowledge about mortality data, which, interestingly are the very bases that experts use to judge risks. Perhaps preservice teachers recognize that they lack information on mortality rates associated with risks, or perhaps other bases for judging risks are considered more important. This is consistent with Slovic's (1987) conclusion that experts and nonexperts appear to have part (albeit different parts) of the

TABLE 2
*Basis for Elementary and Secondary Preservice Teachers' Judgments of Risks: Mean Ranks*

| Basis for judging risk | Elementary preservice $n = 17$ Rank (*M*) | Secondary preservice $n = 14$ Rank (*M*) |
|---|---|---|
| Potential immediate risk to individual | 6.5 (3.35) | 1 (5.50) |
| Risk to environment | 1 (4.88) | 2 (4.64) |
| Catastrophic potential | 4 (3.82) | 3 (4.21) |
| Potential delayed, adverse risk to individuals | 3 (4.00) | 4 (4.14) |
| Threat to future generations | 2 (4.82) | 5 (3.86) |
| Knowledge of mortality related to risk | 6.5 (3.35) | 6 (3.50) |
| General dread | 5 (3.77) | 7 (2.14) |

*Note:* Rating scale: 1 = *least important*; 7 = *most important*.

picture in risk assessment—and for those interested in risk assessment to have a reasonably accurate view, a consideration of other factors needs to be addressed. Preparation of preservice teachers today, therefore, requires development of approaches to integrate science, mathematics, and technology with social, political, economic, and psychological perspectives.

**Characteristics of Highest Risks**

The preservice teachers were asked to select their 3 highest risks from the original list of 30 risks from Slovic (1987) and to characterize risks along voluntary or involuntary and known or unknown dimensions (adapted from Slovic, 1987 and Cutter, 1993). Frequencies were calculated for elementary and secondary preservice teachers' selections in each of these four categories. Table 3 arrays these risks. From these data, two thirds (68%) of the risk activities rated as the top 3 highest risks are voluntary and known risks.

In examining the risks selected, it is salient that handguns are mentioned 12 times, accounting for 26% of the responses. Characterization of handguns as both voluntary and involuntary may relate to perceptions of roles as gun users or owners versus victims of gun-related crimes. Again, a question of media attention to gun-related crimes in schools may be associated with the high level of attention given to this risk.

TABLE 3
*Elementary and Secondary Preservice Teachers' Frequencies for Selections of Up to Three Highest Risks and Characterization of Risks*

| Highest risks arranged by category | Elementary preservice | Secondary preservice |
|---|---|---|
| Voluntary, known risks | | |
| alcoholic beverages | 6 | 4 |
| handguns | 6 | 2 |
| smoking | 5 | 4 |
| motorcycles | 3 | |
| motor vehicles | 2 | |
| Voluntary, unknown risks | | |
| handguns | 1 | |
| police work | | 2 |
| x-rays | | 1 |
| Involuntary, known risks | | |
| hand guns | 2 | 1 |
| nuclear power | 1 | 1 |
| pesticides | 1 | |
| Involuntary, unknown risks | | |
| pesticides | | 2 |
| motor vehicles | 1 | |
| x-rays | 1 | |
| nuclear | 1 | |

It is also interesting that while elementary preservice teachers mentioned motorcycles and motor vehicles six times, secondary preservice teachers neglected to mention them at all, again reflecting a glaring lack of attention to a risk that could very well affect high school students.

Several risks appeared on the list that had not appeared as high risks on preservice teachers' original rankings (i.e., Table 1). For example, x-rays were mentioned once and characterized as associated with an unknown level of risk. Pesticides and police work were also mentioned, although these were not ranked as among the highest risks in Table 1, either.

There was a notable degree of inconsistency with respect to risks being characterized as voluntary or involuntary, known or unknown, suggesting that more needs to be known about the actual conceptual "models" of risks that teachers use for basing their decisions. It appears, however, that risks characterized as voluntary and known involve personal choices like drinking alcohol, smoking, and use of motor vehicles and motorcycles, while risks considered as involuntary are perceived as involving potentially larger-scale risks for many individuals (e.g., pesticides and nuclear power).

Finally, it is interesting that more risks fell into the voluntary rather than the involuntary categories. Finding that preservice teachers' views focus primarily on risks to which one is voluntarily exposed may imply a belief that knowledge and decision making play important roles in determining risk-taking behaviors.

**Preservice Teachers' Choices of Risk Topics for Their Students**

The last question asked the preservice teachers to list at least three risk-related topics that are important for their students to learn about in each of the three categories: local, global, and personal. The preservice teachers made 278 suggestions, which were categorized into 21 topical areas, some of which included topics not presented in Slovic's (1987) list. The 21 topical areas were determined by a content analysis and clustering of similar items carried out by the first author, who is considered to be a science-content expert, due to 30+ years as a science-curriculum developer and science-teacher educator. These topical areas and the items they subsumed were corroborated by the co-authors. Frequencies for each topical area were calculated for the elementary and secondary preservice teachers. Table 4 lists the topical areas in descending order of frequency for the combined and separate responses of elementary and secondary preservice teachers. Table 5 shows topics mentioned by the preservice teachers that did not appear on Slovic's (1987) list. It is noteworthy that some of these choices shown in Table 5 reflect topics that normally receive attention in environmental studies units (e.g., global change and environmental degradation). In addition, topics like Acquired Immune Deficiency Syndrome (AIDS) and sexually transmitted diseases (STD) have received considerable media attention since the publication of Slovic's (1987) study. Clearly, certain categories in the original

TABLE 4
*Elementary and Secondary Preservice Teachers' Choice of Risk Topics for Their Students: Frequency Counts for Risks of Global, Local, and Personal Importance*

| Topics | Total preservice | Elementary preservice | Secondary preservice |
|---|---|---|---|
| Pollution/Pesticides | 31[a] | 10[a] (7, 2, 1)[b] | 21[a] (8, 10, 3)[b] |
| Guns/Violence/Gangs | 30 | 12 (5, 7, 0) | 18 (2, 8, 8) |
| Drugs | 28 | 23 (4, 8, 11) | 5 (0, 1, 4) |
| Alcohol | 23 | 12 (2, 2, 8) | 11 (1, 2, 8) |
| Smoking | 18 | 9 (1, 0, 8) | 9 (0, 0, 9) |
| Environmental destruction | 17 | 6 (0, 3, 3) | 11 (5, 5, 1) |
| Disease threats to humans | 17 | 4 (2, 0, 2) | 13 (6, 3, 4) |
| Nuclear power | 16 | 9 (9, 0, 0) | 7 (7, 0, 0) |
| Atmosphere (environment) | 15 | 9 (9, 0, 0) | 6 (6, 0, 0) |
| Athletic/Outdoor activities | 10 | 6 (1, 4, 1) | 4 (0, 1, 3) |
| Rainforests | 9 | 4 (4, 0, 0) | 5 (3, 2, 0) |
| Overpopulation | 9 | 6 (3, 1, 2) | 3 (2, 1, 0) |
| Sexual behavior | 9 | 4 (0, 0, 4) | 5 (0, 2, 3) |
| Accidents/Personal safety | 9 | 9 (0, 4, 5) | 0 |
| Natural disasters/Weather | 7 | 5 (1, 3, 1) | 0 |
| Lifestyle/Health choices | 7 | 7 (0, 0, 7) | 0 |
| Motor vehicles/Motorcycles | 7 | 2 (0, 2, 0) | 5 (0, 4, 1) |
| Other risks | 6 | 6 (3, 3, 0) | 0 |
| Personal/Social behaviors | 4 | 4 (0, 0, 4) | 0 |
| Electric power | 2 | 0 | 2 (0, 2, 0) |
| Occupational hazards | 1 | 0 | 1 (1, 0, 0) |

[a]Indicates frequency per group. [b]Indicates frequencies for risks of global, local, and personal importance, respectively.

TABLE 5
*Categorized Preservice Teachers' Choices of Risk Topics for Their Students Not Mentioned on Slovic's (1987) List*

| Category | Examples and comments |
|---|---|
| Accidents/Safety | Personal safety habits related to fire, accidents, kidnapping |
| Global environment and atmosphere | Global warming, greenhouse effect, ozone layer; chlorofluorocarbons and spray cans |
| Disease, poverty, and famine | Acquired Immune Deficiency Syndrome (AIDS); sexually transmitted diseases; other viral infections; vaccinations; poverty; famine |
| Regional environmental destruction | Desertification; environmental degradation; overfishing/lack of agricultural technologies; extinction (wildlife); species extinction; development; loss of habitat of endangered native species |
| Rainforest destruction | Deforestation; forests burning in Brazil (mentioned enough times to warrant the separate category, Rainforests) |
| Sexual behavior | Teen pregnancy; contraceptives, sex; sex, pregnancy, and disease; planned parenthood |
| Lifestyle and health choices | Nutrition; health; hygiene; health and lifestyle, exercise |
| Personal/Social behaviors | Importance of family; rights of an individual; social interaction |

list need to be broadened or revised to more appropriately account for risks applied differentially to various age groups.

In general, preservice teachers' selection of risk topics for their own instruction (Table 4) reflects many of the topics used in previous questions. Therefore, teachers appear to be most concerned about risks over which students would appear to have voluntary, personal control, and over which they are likely to exercise decision-making capabilities while still in school (e.g., drugs, alcohol, smoking).

However (and quite consistent with responses to previous questions), preservice teachers overemphasize some risks (e.g., guns, nuclear power) at the expense of others which are likely to adversely affect a greater number of students at some point in their lives (e.g., sexual behaviors, motor vehicles/motorcycles, accidents). Preservice teachers also emphasize some risks at the elementary level (e.g., drugs, lifestyle/health choices) that are de-emphasized at the secondary level, just when students might be faced with choices involving these risks.

Finally, in examining preservice teachers' determination of whether risks can be characterized as global, local, or personal, there is little consistency, except for risks such as nuclear power and atmosphere/environment, which are consistently characterized as global, and personal/social behaviors, which are characterized as personal. It is possible that thinking of risks in these terms is unfamiliar for teachers, or in considering risks as a topic for instruction, that teachers use multiple perspectives as risk-takers themselves and as arbiters of risks for their students and others.

It is also interesting that preservice teachers in Hawai'i neglected to mention the very topics that most notably affect their own local island environments. These include population pressure on small islands and associated increased resource use; potential effects of global warming on localized regions of the Pacific (i.e., sea level rising and devastation of low islands and coastal regions); dangers to Hawai'i's tropical rainforests as the only tropical rainforests in the U.S. (although the preservice teachers do mention tropical rainforests in Brazil); and decimation of native forests of *ōhi'a, koa,* and sandalwood and replacement with exotic trees such as eucalyptus and Norfolk pines. The invasive and destructive effects of alien species, including ivy gourd vines, feral pigs, and deer should be added to this list. Further, dangers to coral reefs should be emphasized, especially since Hawai'i is the state (excluding U.S. territories) with 85% of U.S. coral reefs.

Additionally, teachers need to be aware of where their biases and beliefs come from regarding risks. If media (local and national) play a major role, as press coverage and sensationalism often do, science teachers especially need to learn to be critical and question users of information and to provide students with similar opportunities. This is especially important as teachers are encouraged to rely on outside sources beyond textbooks and are bombarded by information regarding risks from multiple and often appealing sources, such as television documentaries, videodiscs, information off the Internet, and so on. Teachers, as primary decision-makers about what happens in the classroom, need to be informed scientifically and statistically in their curricular decisions.

## Conclusion and Implications

The present research clearly demonstrates that there are differences between Hawai'i's preservice teachers' and U.S. mainland experts' assessments of risks. It is interesting that in many ways, Hawai'i's preservice teachers appear to have concerns about risks that are likely to be more affected by mainland U.S. news media, curricular guides, and textbooks than about knowledge of local factors affecting risks. A major implication is that further research is needed in which local and personal factors are defined

and examined. For example, local factors related to specific geography, geology, climate, and culture shape lifestyle and affect opportunities for participation, as is clearly the case in Hawai'i and is very likely to be the case elsewhere. Other factors like age, actual personal experience, and gender should be considered as well. Additionally, the relationship between knowledge about risks and actual engagement in risk-related behavior should be elucidated.

In addition to these general suggestions, we recommend that future research on risk and the development of approaches to prepare teachers to teach about risk be framed according to the NSES Content Standard F: "Science in Personal and Social Perspective." This states that all students should develop understanding of personal health; populations, resources, and environments; natural hazards; risks and benefits; and science and technology in society (NRC, 1996, p. 167). These categories provide a commonsense approach to categorizing risks according to personal, societal, and environmental dimensions.

Further, the National Science Education Standards call for study of benefits as well as risks, which would provide currently lacking balance and perspective to risk studies and to personal decisions related to risk management. Clearly, we do not live in a risk-free world, and we most likely would not want to live in such a world. For example, for teachers and students in Hawai'i, or anywhere for that matter, to focus solely on the risks associated with activities like swimming, hiking, or biking would ignore, and might even work against, deriving potential and real benefits in terms of health and well-being.

In addition, our research indicates that the NSES Content Standard F: "Science in Personal and Social Perspectives" needs to be understood in localized, real-world contexts. We note with dismay that the preservice science teachers in our study mentioned rainforests in Brazil but not in Hawai'i, which has the only tropical rainforests in the United States. And, none listed coral reef degradation as a topic, even though Hawai'i contains about 85% of corals found in the 50 states. We believe that Hawai'i science teachers, especially, have a responsibility to help students understand the unique nature of tropical islands: that they range from small atolls to large volcanic high islands and that they include a wide range of ecosystem diversity within small, isolated geographic areas (e.g., from marine to aquatic or from wetlands to dry desert-like environments). Furthermore, the incredibly diverse flora and fauna of islands are susceptible to human impact. A case in point is how humans in the past century collected and depleted populations of land snail species in Hawai'i, which once numbered in the hundreds. Thus, there is a strong need to frame studies of risks and benefits in a manner appropriate to tropical island environments. These studies must not only focus on natural hazards and risks to humans

associated with tropical island environments but also include consideration of the risks posed by humans (individually, collectively, and through technologies) to these environments.

Finally, as a component of science literacy, risk education provides opportunities for students from Hawai'i and elsewhere to apply scientific processes to everyday sense-making at individual, local, and other levels, and contributes to the "habits of mind" advocated in *Benchmarks for Science Literacy* (AAAS, 1993):

> In a culture increasingly pervaded by science, mathematics, and technology, science literacy requires understandings and habits of mind that enable citizens to grasp what those enterprises are up to, to make sense of how the natural and designed worlds work, to think critically and independently, to recognize and weigh alternative explanations of events and design trade-offs, and to deal sensibly with problems that involve evidence, numbers, patterns, logical arguments, and uncertainties. (p. xi)

## References

American Association for the Advancement of Science (1993). *Benchmarks for scientific literacy: Project 2061.* New York: Oxford University Press.

Cutter, S. (1993). *Living with risk: The geography of technological hazards.* New York: Edward Arnold.

Gregory, R. (1991). Critical thinking for environmental health risk education. *Health Education Quarterly, 18*(3), 273–284.

Hoffman, P. (Ed.). (1996, May). The science of risk [Special issue]. *Discover, 17*(5).

Lane, J., Wilke, R., Champeau, R., & Sivek, D. (1994). Environmental education in Wisconsin: A teacher survey. *The Journal of Environmental Education, 25*(4), 9–17.

Lane, J., Wilke, R., Champeau, R., & Sivek, D. (1995). Strengths and weaknesses of teacher environmental education preparation in Wisconsin. *The Journal of Environmental Education, 27*(1), 36–45.

Lane, J., Wilke, R., Champeau, R., & Sivek, D. (1996). Wisconsin EE mandates: The bad news and the good news. *The Journal of Environmental Education, 27*(2), 33–39.

Miller, G., Jr. (1992). *Living in the environment.* Belmont, CA: Wadsworth.

National Research Council. (1996). *National science education standards.* Washington, DC: National Academy Press.

Pateman, B., Saka, S. M., & Lai, M. K. (1996). Adolescent health behaviors in Hawai'i: Curriculum directions from the 1995 Hawai'i and national Youth Risk Behavior Surveys. *Pacific Educational Research Journal, 8*(1), 3–18.

Renn, O., Burns, W. J., Kasperson, J. X., Kasperson, R. E., & Slovic, P. (1992). The social amplification of risk: Theoretical foundations and empirical applications. *Journal of Social Issues, 48*(4), 137–160.

Riechard, D. E., & McGarrity, J. (1994). Early adolescents' perceptions of relative risk from 10 societal and environmental hazards. *The Journal of Environmental Education, 26*(10), 16–23.

Riechard, D. E., & Peterson, S. J. (1998). Perception of environmental risk related to gender, community socioeconomic setting, age, and locus of control. *The Journal of Environmental Education, 30*(1), 11–19.

Ross, J. F. (1999, June). Discovering the odds. *Smithsonian, 30,* 132–142.

Slovic, P. (1987). Perception of risk. *Science, 336,* 280–285.

Slovic, P., Fischoff, B., & Lichtenstein, S. (1982). Facts versus fears: Understanding perceived risk. In D. Kahneman, P. Slovic, & A. Tversky (Eds.), *Judgment under uncertainty: Heuristics and biases* (pp. 463–489). New York: Cambridge University Press.

Stone, R. (1999). A plan to save Hawai'i's threatened biodiversity. *Science, 285,* 817–819.

## Authors

E. Barbara Klemm is an associate professor of Teacher Education and Curriculum Studies at the University of Hawai'i at Mānoa. Her research interests include scientific literacy for the 21st century and science teacher education.

Marie K. Iding is an associate professor of Educational Psychology at the University of Hawai'i at Mānoa. Her research interests include text processing, multimedia systems, and mental models in science.

Thomas W. Speitel is a professor of natural and information science in the Curriculum Research & Development Group, University of Hawai'i at Mānoa. His current research interests focus on the Internet's support of science education for students and professional development for science teachers.

John S. Ige is a doctoral student in Communication and Information Sciences at the University of Hawai'i at Mānoa. His research interests include information technology, information systems, and educational technology.

## Information for Contributors

The *Pacific Educational Research Journal* invites original manuscripts featuring theoretical, empirical, or applied research with (a) implications for the education of populations indigenous to the Pacific and the Pacific Rim or (b) relevance to educational issues specific to the Pacific area.

Address for Submission of Manuscript:

Editor, *Pacific Educational Research Journal*
Hawai'i Educational Research Association (HERA)
c/o Department of Educational Psychology
University of Hawai'i
1776 University Ave., Wist 214
Honolulu, HI 96822-2463
HERA Home Page: http://www.hawaii.edu/hera/

Subscription Price (Individual): $12.00
Institutional Subscription: $20.00
Free to HERA members (annual membership is $15)

Publication Guidelines:
Manuscript Length: 6–20 pages
Copies Required: Original plus three (plus diskette)

Review Information:
Type of Review: Blind Review (3 reviewers)

Sponsorship: Hawai'i Educational Research Association

Manuscript Guidelines/Comments:

Manuscripts not identifying the author(s) should be submitted on diskette in MS Word or WordPerfect format (Macintosh or IBM). Send an original and three copies, double-spaced, on 8-1/2 by 11-inch paper in conformance with the guidelines in the *Publication Manual* of the American Psychological Association (4th edition, 1994); however, do not indent (despite what is stated in the *APA Manual*) the first line in each reference. Manuscripts that do not conform substantially to APA style may be returned unreviewed. For special cases, prior correspondence with the editors is recommended.

On separate pages include an abstract (approximately 100 words) and the

name(s) and address(es) of the author(s) and institutional affiliation(s). Footnotes are not permitted. Make figures camera ready.

For more information, contact either editor: Morris Lai at 808-956-7900, e-mail lai@hawaii.edu; or Kathleen Berg at 808-956-4952, e-mail kberg@hawaii.edu.

# In This Issue

**Community Perceptions of Culture and Education on Moloka'i**
*Lois A. Yamauchi, William L. Greene, Katherine T. Ratliffe, and Andrea K. Ceppi*

**Academic Performance of Asian American Adolescents: An Exploration of the Relative Effects of Cultural and Social Capital**
*Yoshimitsu Takei, Melvin E. Clark, Roger Shouse, and Shan-nan Chang*

**How Well Are Schools Addressing the Health-Related Education Needs of Hawai'i Youth? Results From the Youth Risk Behavior Survey and the School Health Education Profile Survey**
*Beth Pateman, Susan M. Saka, and Morris K. Lai*

**A Longitudinal Study of the Patterns of Language Use in American Samoa: 1973–1998**
*Anne R. Freese and Peggy A. Haleck*

**Teachers' Attitudes Toward Problem Behaviors in Japan and the U.S.**
*Hideki Sano, Osami Fukushima, Evangelina Bustamante Jones, Russell L. Young, John D. Chamley, and Marian Aste*

**Preservice Teachers' Perceptions of Risks**
*E. Barbara Klemm, Marie K. Iding, Thomas W. Speitel, and John S. Ige*